wwPDB EM Validation Summary Report

Jan 20, 2026 – 01:08 PM EST

PDB ID	:	9YNC / pdb_00009ync
EMDB ID	:	EMD-73173
Title	:	Motor domains of phi-like human dynein-1 bound to dynactin-p150glued and LIS1
Authors	:	Yang, J.; Rao, Q.; Chai, P.; Zhang, K.
Deposited on	:	2025-10-10
Resolution	:	3.93 Å(reported)

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references ⓘ) were used in the production of this report:

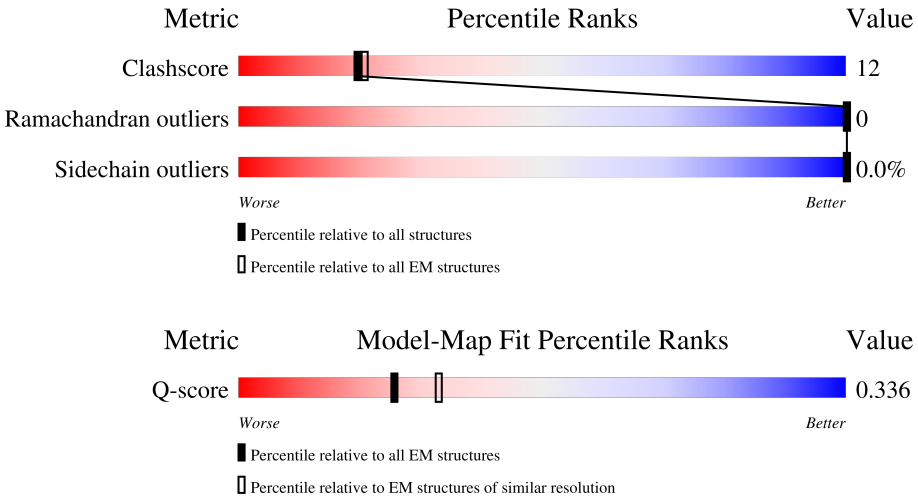
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.93 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	7811 (3.43 - 4.43)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	4646	45% 21% 34%
1	B	4646	49% 17% 34%
2	C	410	54% 25% 21%
2	D	410	48% 29% 24%

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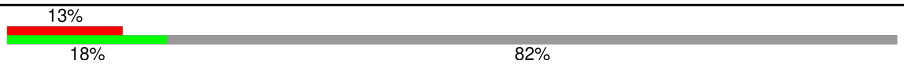
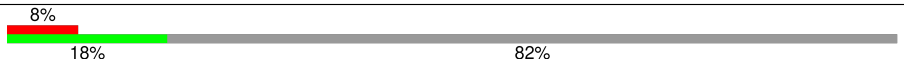
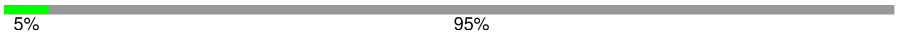
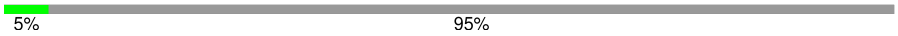
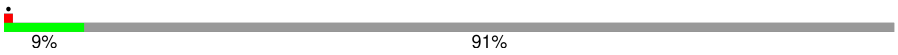
Mol	Chain	Length	Quality of chain
2	E	410	
2	F	410	
3	G	638	
3	H	638	
4	I	1281	
4	J	1281	

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 56882 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Cytoplasmic dynein 1 heavy chain 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	3064	Total 24650	C 15707	N 4259	O 4563	S 121	0	0
1	B	3065	Total 24658	C 15711	N 4260	O 4566	S 121	0	0

- Molecule 2 is a protein called Platelet-activating factor acetylhydrolase IB subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	322	Total 2557	C 1608	N 452	O 477	S 20	0	0
2	D	313	Total 2494	C 1571	N 440	O 463	S 20	0	0
2	E	75	Total 373	C 223	N 75	O 75		0	0
2	F	75	Total 373	C 223	N 75	O 75		0	0

- Molecule 3 is a protein called Cytoplasmic dynein 1 intermediate chain 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	G	34	Total 170	C 102	N 34	O 34	0	0
3	H	34	Total 170	C 102	N 34	O 34	0	0

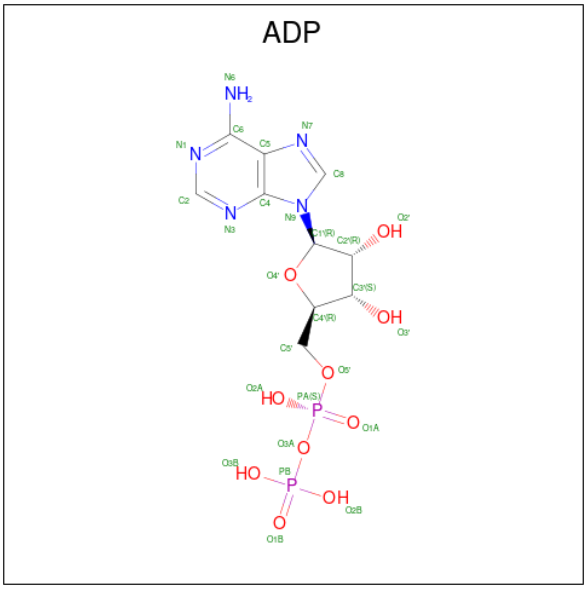
- Molecule 4 is a protein called Dynactin subunit 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	I	122	Total 607	C 363	N 122	O 122	0	0
4	J	120	Total 602	C 360	N 121	O 121	1	0

There are 6 discrepancies between the modelled and reference sequences:

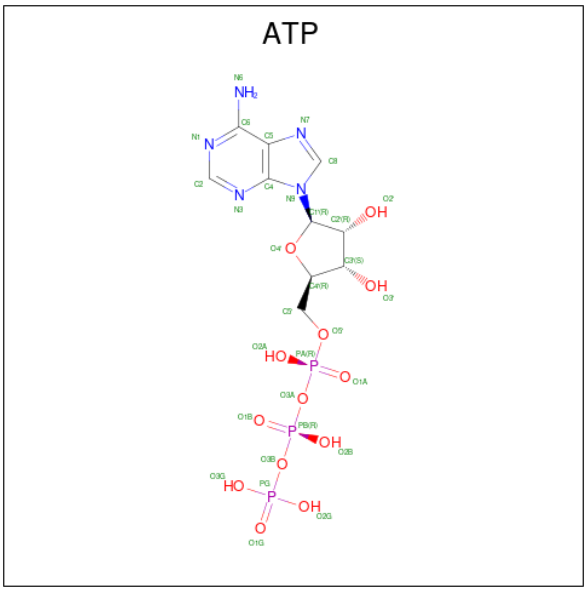
Chain	Residue	Modelled	Actual	Comment	Reference
I	1279	LEU	-	expression tag	UNP A0A287B8J2
I	1280	ILE	-	expression tag	UNP A0A287B8J2
I	1281	SER	-	expression tag	UNP A0A287B8J2
J	1279	LEU	-	expression tag	UNP A0A287B8J2
J	1280	ILE	-	expression tag	UNP A0A287B8J2
J	1281	SER	-	expression tag	UNP A0A287B8J2

- Molecule 5 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
5	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
5	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
5	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
5	B	1	Total	C	N	O	P	0
			27	10	5	10	2	
5	B	1	Total	C	N	O	P	0
			27	10	5	10	2	
5	B	1	Total	C	N	O	P	0
			27	10	5	10	2	

- Molecule 6 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
6	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
6	B	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 7 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

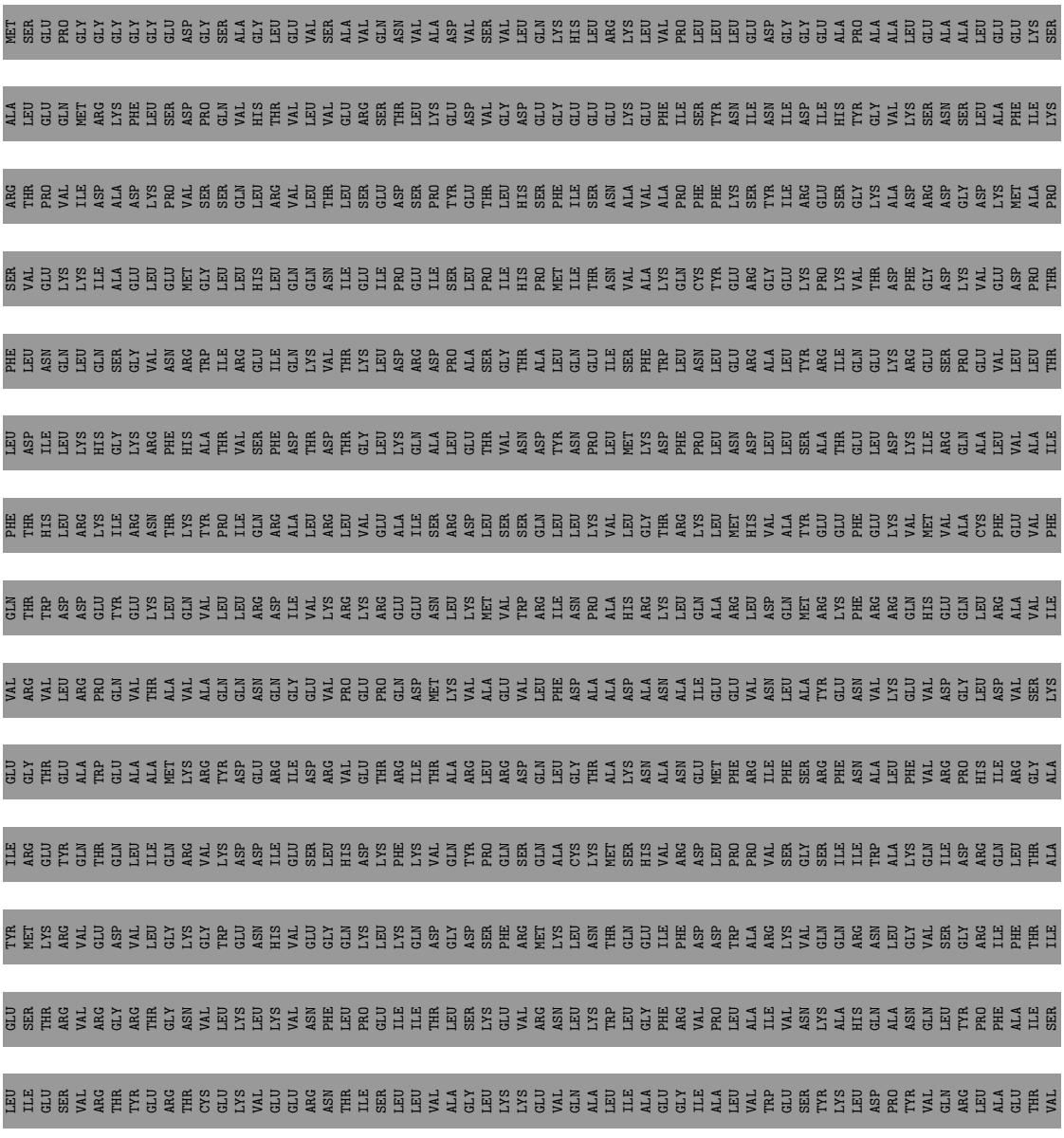
Mol	Chain	Residues	Atoms		AltConf
7	A	2	Total	Mg	0
			2	2	
7	B	2	Total	Mg	0
			2	2	

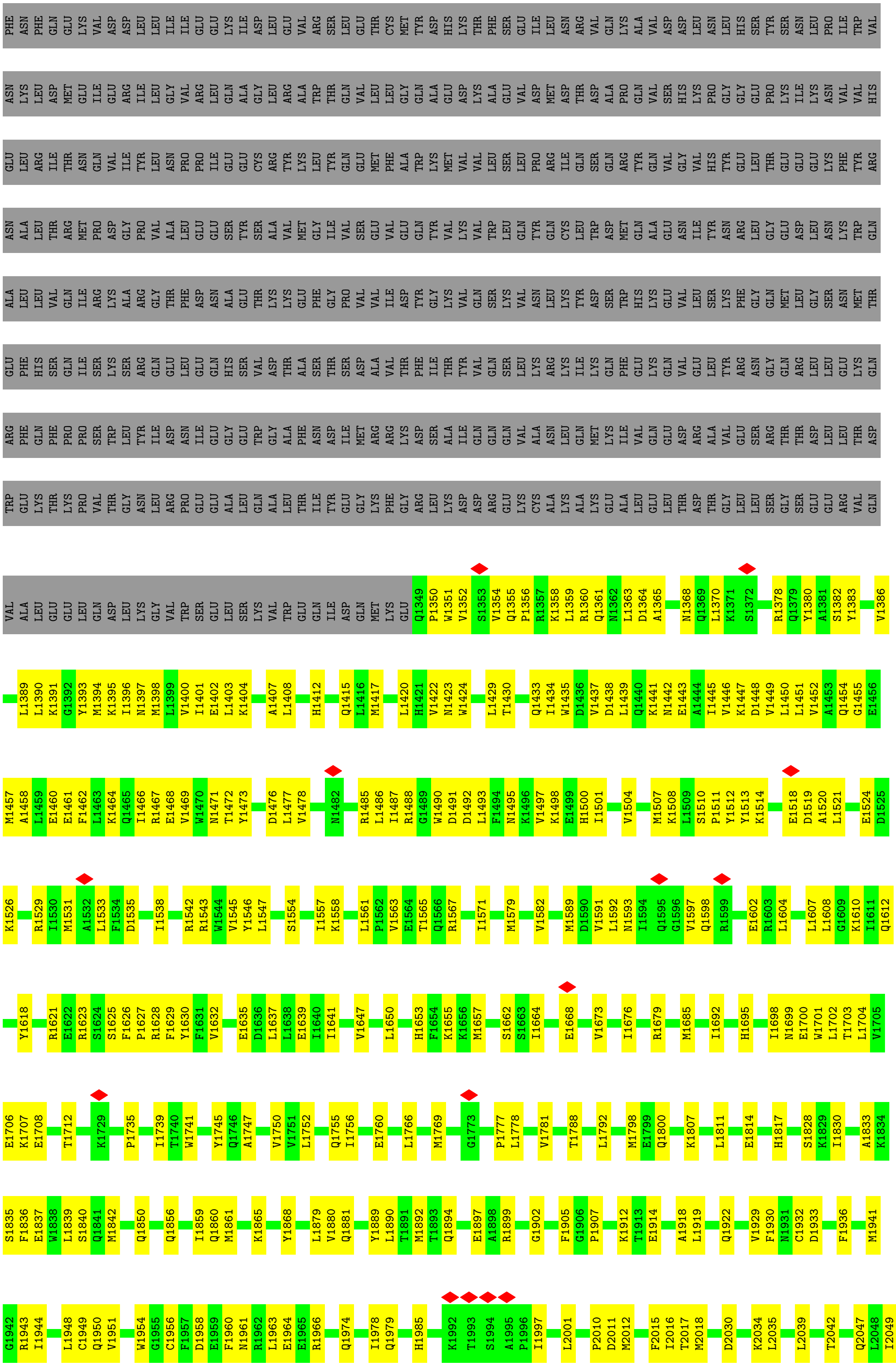
3 Residue-property plots (i)

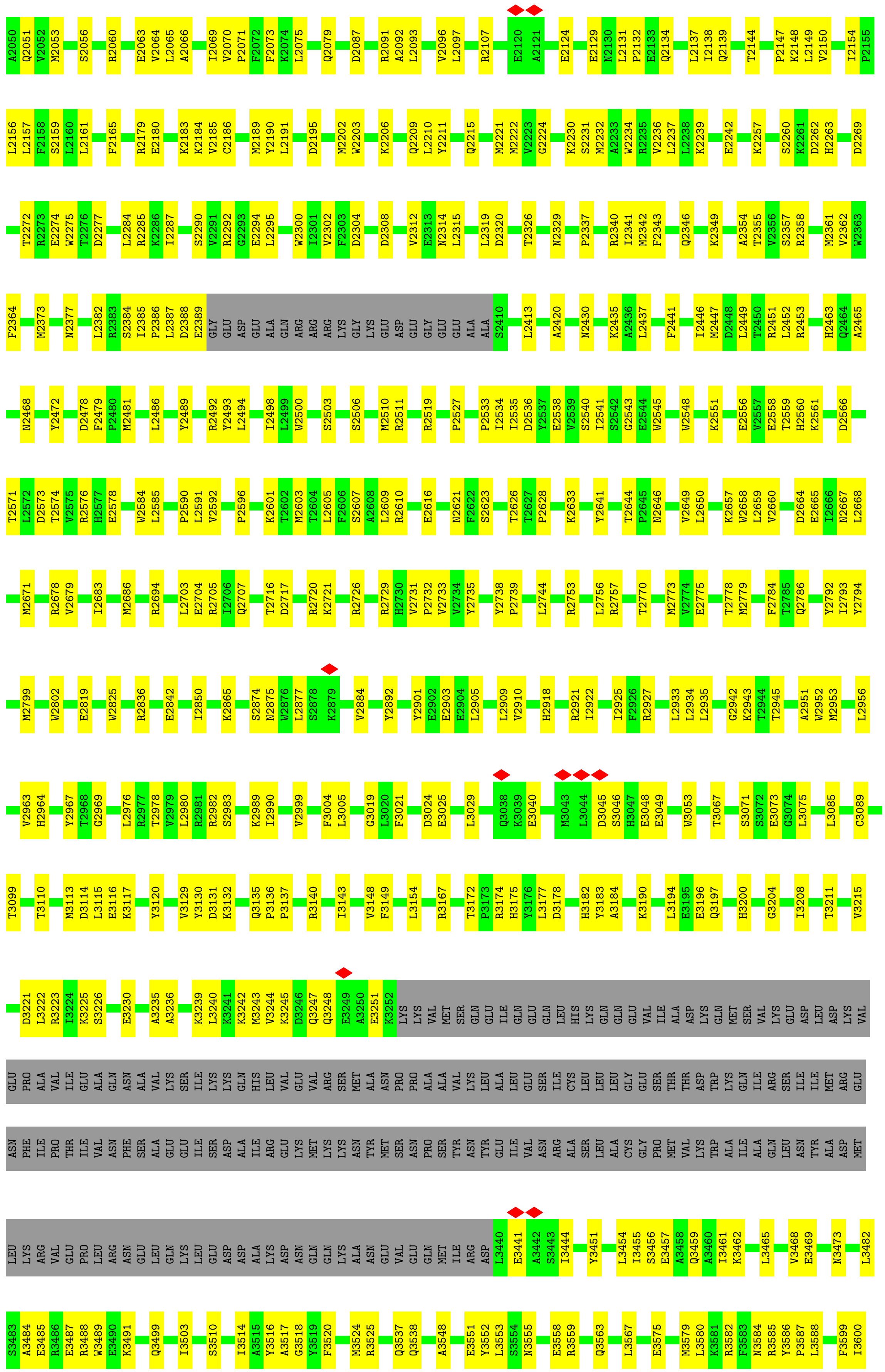
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

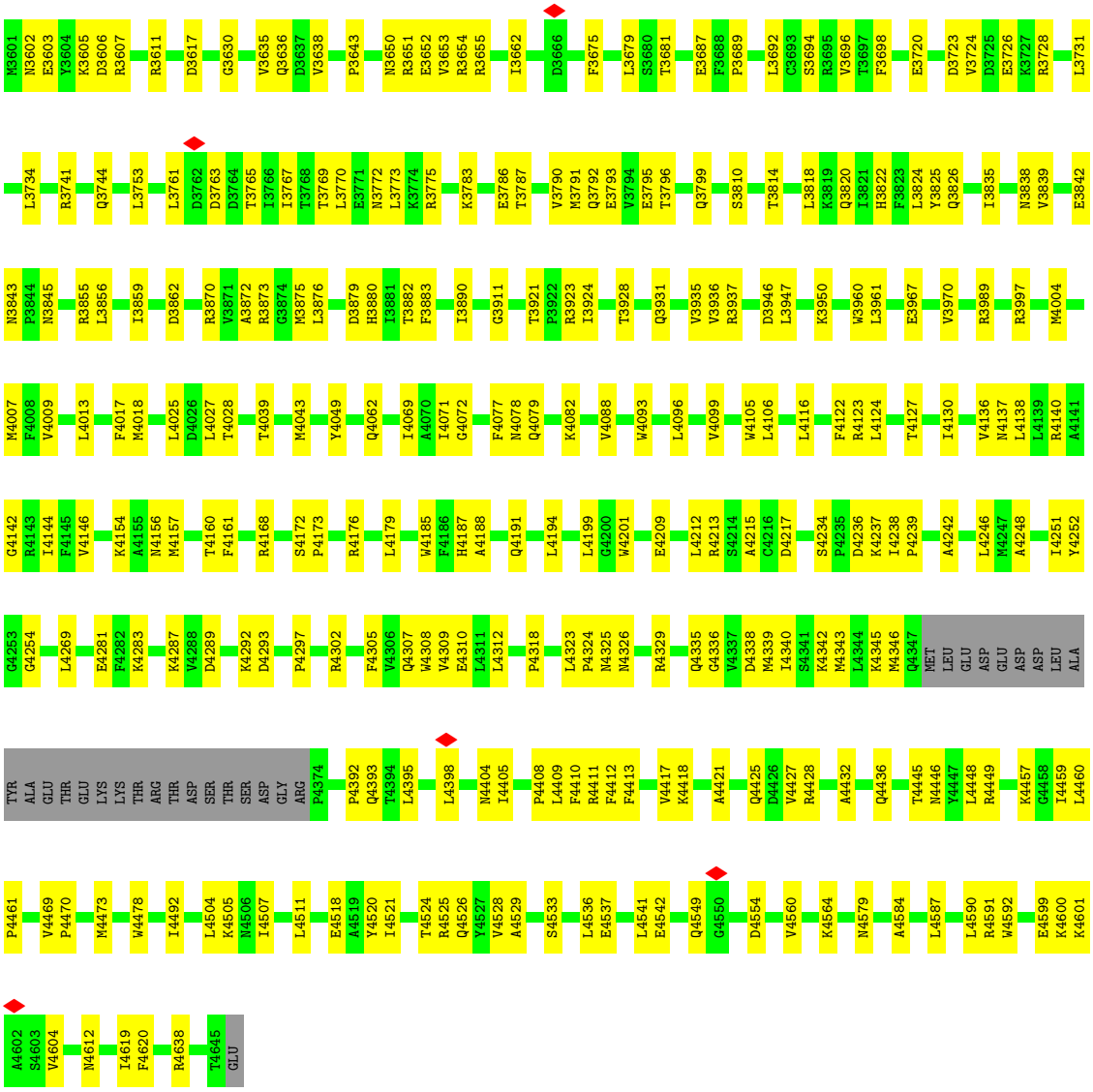
- Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain A:



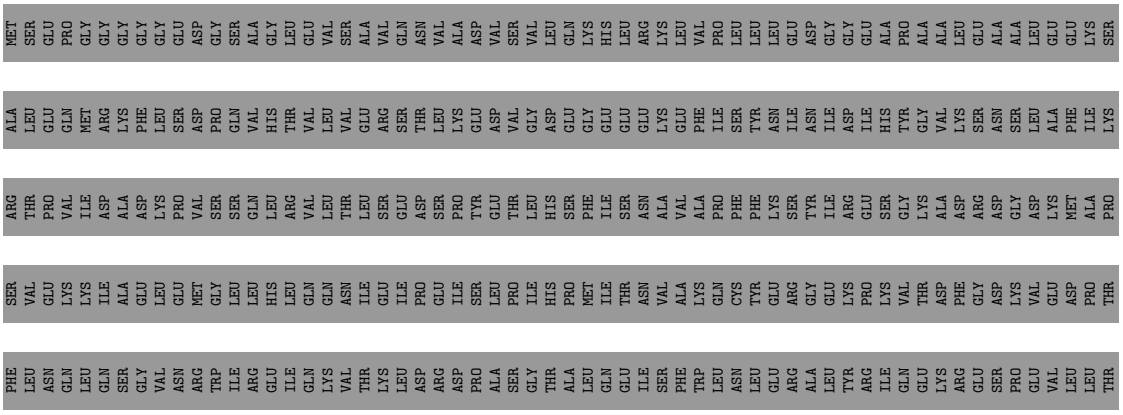

PHE ASN PHE GLN GLU LYS VAL ASP ASP LEU LEU ILE ILE GLU GLU LYS ILE ASP LEU GLU VAL ARG SER LEU GLU THR CYS MET TYR ASP HIS LYS THR PHE SER GLU ILE LEU ASN ARG VAL GLN LYS ALA VAL ASP ASP LEU ASN LEU HIS SER TYR SER ASN LEU PRO ILE TRP VAL
ASN LYS LEU ASP MET GLU ILE GLU ARG ILE LEU GLY VAL ARG LEU GLN ALA GLY LEU ARG ALA TRP THR GLN VAL LEU LEU GLY GLN ALA GLU ASP LYS ALA GLU VAL ASP MET ASP THR ASP ALA PRO GLN VAL SER HIS LYS PRO GLY GLY GLU PRO LYS ILE LYS ASN VAL VAL HIS
GLU LEU ARG ILE THR ASN GLN VAL ILE TYR LEU ASN PRO PRO ILE GLU GLU CYS ARG TYR LYS LEU TYR GLN GLU MET PHE ALA TRP LYS MET VAL VAL LEU SER LEU PRO ARG ILE GLN SER GLN ARG TYR GLN VAL GLY VAL HIS TYR GLU LEU THR GLU GLU GLU LYS PHE TYR ARG
ASN ALA LEU THR ARG MET PRO ASP GLY PRO VAL ALA LEU GLU GLU SER TYR SER ALA VAL MET GLY ILE VAL SER GLU VAL GLU GLN TYR VAL LYS VAL TRP LEU GLN TYR GLN CYS LEU TRP ASP MET GLN ALA GLU ASN ILE TYR ASN ARG LEU GLY GLU ASP LEU ASN LYS TRP GLN
ALA LEU LEU VAL GLN ILE ARG LYS ALA ARG GLY THR PHE ASP ASN ALA GLU THR LYS LYS GLU PHE GLY PRO VAL VAL ILE ASP TYR GLY LYS VAL GLN SER LYS VAL ASN LEU LYS TYR ASP SER TRP HIS LYS GLU VAL LEU SER LYS PHE GLY GLN MET LEU GLY SER ASN MET THR
GLU PHE HIS SER GLN ILE SER LYS SER ARG GLN GLU LEU GLU GLN HIS SER VAL ASP THR ALA SER THR SER ASP ALA VAL THR PHE ILE THR TYR VAL GLN SER LEU LYS ARG LYS ILE LYS GLN PHE GLU LYS GLN VAL GLU LEU TYR ARG ASN GLY GLN ARG LEU LEU GLU LYS GLN
ARG PHE GLN PHE PRO PRO SER TRP LEU TYR ILE ASP ASN ILE GLU GLY GLU TRP GLY ALA PHE ASN ASP ILE MET ARG ARG LYS ASP SER ALA ILE GLN GLN GLN VAL ALA ASN LEU GLN MET LYS ILE VAL GLN GLU ASP ARG ALA VAL GLU SER ARG THR THR ASP LEU LEU THR ASP
TRP GLU LYS THR LYS PRO VAL THR GLY ASN LEU ARG PRO GLU GLU ALA LEU GLN ALA LEU THR ILE TYR GLU GLY LYS PHE GLY ARG LEU LYS ASP ASP ARG GLU LYS CYS ALA LYS ALA LYS GLU ALA LEU GLU LEU THR ASP THR GLY LEU LEU SER GLY SER GLU GLU ARG VAL GLN
VAL ALA LEU GLU GLU LEU GLN ASP LEU LYS GLY VAL TRP SER GLU LEU SER LYS VAL TRP GLU GLN ILE ASP GLN MET LYS GLU Q1349 P1350 W1351 V1352 S1353 V1354 Q1355 P1356 R1357 K1358 L1359 R1360 Q1361 N1362 L1363 D1364 A1365 N1368 Q1369 L1370 K1371 S1372 R1378 Q1379 Y1380 A1381 S1382 Y1383 V1386
L1389 L1390 K1391 G1392 Y1393 M1394 K1395 I1396 N1397 M1398 L1399 V1400 I1401 E1402 L1403 K1404 A1407 L1408 H1412 Q1415 L1416 M1417 L1420 H1421 V1422 N1423 W1424 L1429 T1430 Q1433 I1434 W1435 D1436 V1437 D1438 L1439 Q1440 K1441 N1442 E1443 A1444 I1445 V1446 K1447 D1448 V1449 L1450 L1451 V1452 A1453 Q1454 G1455 E1456
M1457 A1458 L1459 E1460 E1461 F1462 L1463 K1464 Q1465 I1466 R1467 E1468 V1469 W1470 N1471 T1472 Y1473 D1476 L1477 V1478 N1482 R1485 L1486 I1487 R1488 G1489 W1490 D1491 D1492 L1493 F1494 N1495 K1496 V1497 K1498 E1499 H1500 I1501 V1504 M1507 K1508 L1509 S1510 P1511 Y1512 Y1513 K1514 E1518 D1519 A1520 L1521 E1524 D1525
K1526 R1529 I1530 M1531 A1532 L1533 F1534 D1535 I1538 R1542 R1543 W1544 V1545 Y1546 L1547 S1554 I1557 K1558 L1561 P1562 V1563 E1564 T1565 Q1566 R1567 I1571 M1579 V1582 M1589 D1590 V1591 L1592 N1593 I1594 Q1595 G1596 V1597 Q1598 R1599 E1602 R1603 L1604 L1607 L1608 G1609 K1610 I1611 Q1612
Y1618 R1621 E1622 R1623 S1624 S1625 F1626 P1627 R1628 F1629 Y1630 F1631 V1632 E1635 D1636 L1637 L1638 E1639 I1640 I1641 V1647 L1650 H1653 F1654 K1655 K1656 M1657 S1662 S1663 I1664 E1668 V1673 I1676 R1679 M1685 I1692 H1695 I1698 N1699 E1700 W1701 L1702 T1703 L1704 V1705
E1706 K1707 E1708 T1712 K1729 P1735 I1739 T1740 W1741 Y1745 Q1746 A1747 V1750 V1751 L1752 Q1755 I1756 E1760 L1766 M1769 G1773 P1777 L1778 V1781 T1788 L1792 M1798 E1799 Q1800 K1807 L1811 E1814 H1817 S1828 K1829 I1830 A1833 K1834
S1835 F1836 E1837 W1838 L1839 S1840 Q1841 M1842 Q1850 Q1856 I1859 Q1860 M1861 K1865 Y1868 L1879 V1880 Q1881 Y1889 L1890 T1891 M1892 T1893 Q1894 E1897 A1898 R1899 G1902 F1905 G1906 P1907 K1912 T1913 E1914 A1918 L1919 Q1922 V1929 F1930 N1931 C1932 D1933 F1936 M1941
G1942 R1943 I1944 L1948 C1949 Q1950 V1951 W1954 G1955 C1956 F1957 D1958 E1959 F1960 N1961 R1962 L1963 E1964 E1965 R1966 Q1974 I1978 Q1979 H1985 K1992 T1993 S1994 A1995 P1996 I1997 L2001 P2010 D2011 M2012 F2015 I2016 T2017 M2018 D2030 K2034 L2035 L2039 T2042 Q2047 L2048 I2049

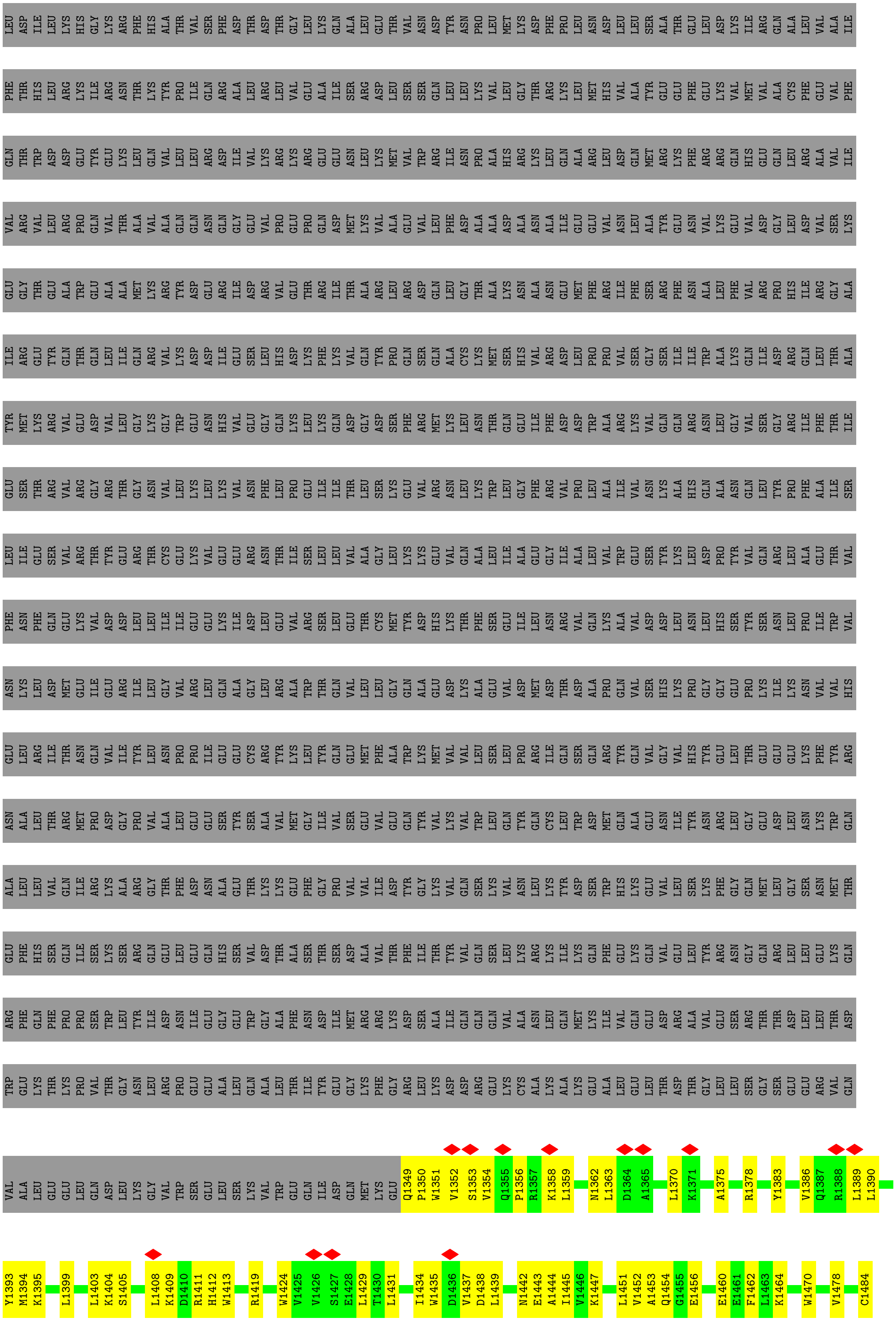


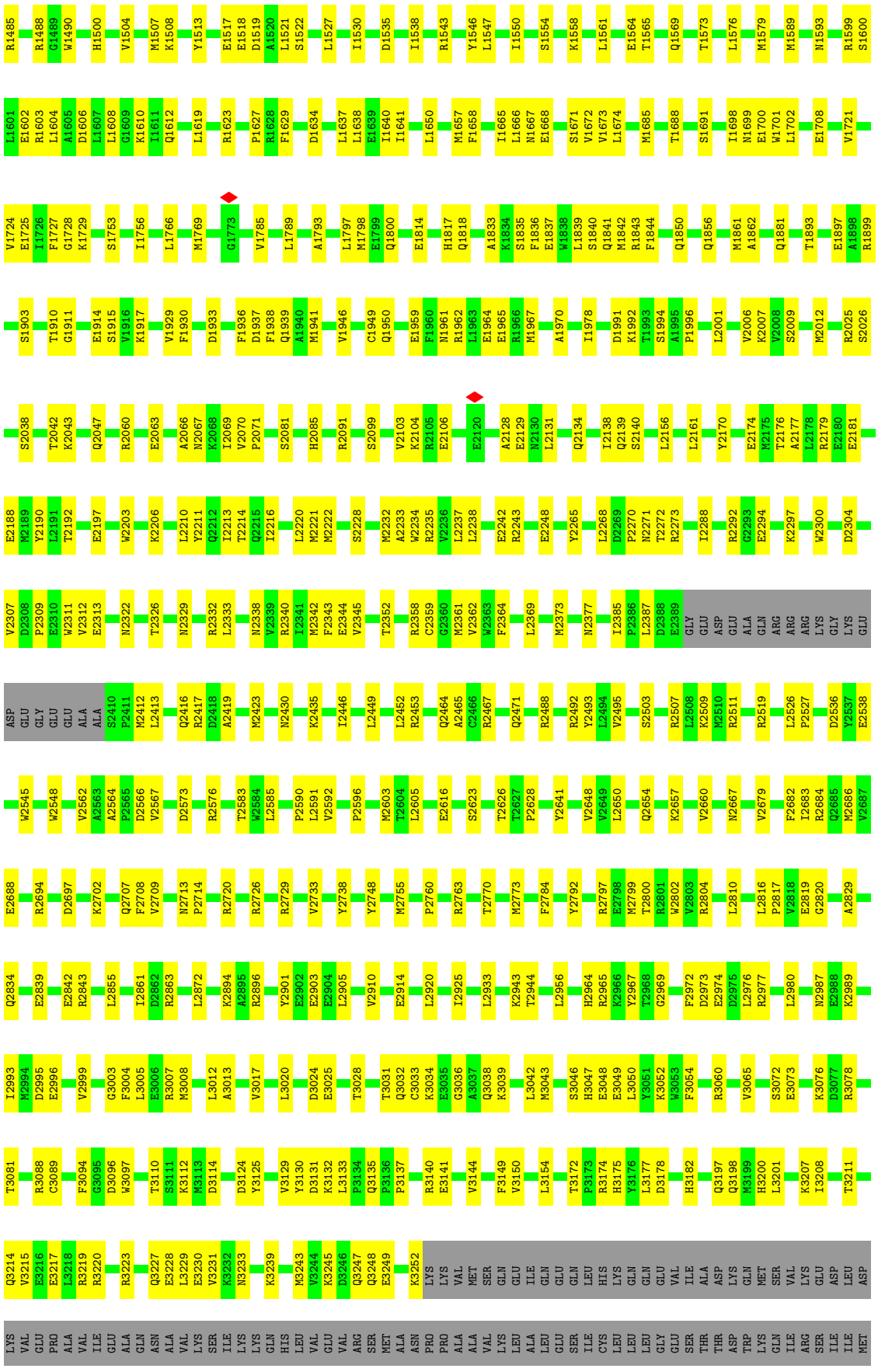


• Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain B:




LEU ASP ILE LEU LYS HIS GLY LYS ARG PHE HIS ALA THR VAL SER PHE ASP THR ASP THR GLY LEU LYS GLN ALA LEU GLU THR VAL ASN ASP TYR ASN PRO LEU MET LYS ASP PHE PRO LEU ASN ASP LEU LEU SER ALA THR GLU LEU ASP LYS ILE ARG GLN ALA LEU VAL ALA ILE
PHE THR HIS LEU ARG LYS ILE ARG ASN THR LYS TYR PRO ILE GLN ARG ALA LEU ARG LEU VAL GLU ALA ILE SER ARG ASP LEU SER SER GLN LEU LEU LYS VAL LEU GLY THR ARG LYS LEU MET HIS VAL ALA TYR GLU GLU PHE GLU LYS VAL MET VAL ALA CYS PHE GLU VAL PHE
GLN THR TRP ASP ASP GLU TYR GLU LYS LEU GLN VAL LEU LEU ARG ASP ILE VAL LYS ARG LYS ARG GLU GLU ASN LEU LYS MET VAL TRP ARG ILE ASN PRO ALA HIS ARG LYS LEU GLN ALA ARG LEU ASP GLN MET ARG LYS PHE ARG ARG GLN HIS GLU GLN LEU ARG ALA VAL ILE
VAL ARG VAL LEU ARG PRO GLN VAL THR ALA VAL ALA GLN GLN ASN GLN GLY GLU VAL PRO GLU PRO GLN ASP MET LYS VAL ALA GLU VAL LEU PHE ASP ALA ALA ASP ALA ASN ALA ILE GLU GLU VAL ASN LEU ALA TYR GLU ASN VAL LYS GLU VAL ASP GLY LEU ASP VAL SER LYS
GLU GLY THR GLU ALA TRP GLU ALA ALA MET LYS ARG TYR ASP GLU ARG ILE ASP ARG VAL GLU THR ARG ILE THR ALA ARG LEU ARG ASP GLN LEU GLY THR ALA LYS ASN ALA ASN GLU MET PHE ARG ILE PHE SER ARG PHE ASN ALA LEU PHE VAL ARG PRO HIS ILE ARG GLY ALA
ILE ARG GLU TYR GLN THR GLN LEU ILE GLN ARG VAL LYS ASP ASP ILE GLU SER LEU HIS ASP LYS PHE LYS VAL GLN TYR PRO GLN SER GLN ALA CYS LYS MET SER HIS VAL ARG ASP LEU PRO PRO VAL SER GLY SER ILE ILE TRP ALA LYS GLN ILE ASP ARG GLN LEU THR ALA
TYR MET LYS ARG VAL GLU ASP VAL LEU GLY LYS GLY TRP GLU ASN HIS VAL GLU GLY GLN LYS LEU LYS GLN ASP GLY ASP SER PHE ARG MET LYS LEU ASN THR GLN GLU ILE PHE ASP ASP TRP ALA ARG LYS VAL GLN GLN ARG ASN LEU GLY VAL SER GLY ARG ILE PHE THR ILE
GLU SER THR ARG VAL ARG GLY ARG THR GLY ASN VAL LEU LYS LEU LYS VAL ASN PHE LEU PRO GLU ILE ILE THR LEU SER LYS GLU VAL ARG ASN LEU LYS TRP LEU GLY PHE ARG VAL PRO LEU ALA ILE VAL ASN LYS ALA HIS GLN ALA ASN GLN LEU TYR PRO PHE ALA ILE SER
LEU ILE GLU SER VAL ARG THR TYR GLU ARG THR CYS GLU LYS VAL GLU GLU ARG ASN THR ILE SER LEU LEU VAL ALA GLY LEU LYS LYS GLU VAL GLN ALA LEU ILE ALA GLU GLY ILE ALA LEU VAL TRP GLU SER TYR LYS LEU ASP PRO TYR VAL GLN ARG LEU ALA GLU THR VAL
PHE ASN PHE GLN GLU LYS VAL ASP ASP LEU LEU ILE ILE GLU GLU LYS ILE ASP LEU GLU VAL ARG SER LEU GLU THR CYS MET TYR ASP HIS LYS THR PHE SER GLU ILE LEU ASN ARG VAL GLN LYS ALA VAL ASP ASP LEU ASN LEU HIS SER TYR SER ASN LEU PRO ILE TRP VAL
ASN LYS LEU ASP MET GLU ILE GLU ARG ILE LEU GLY VAL ARG LEU GLN ALA GLY LEU ARG ALA TRP THR GLN VAL LEU LEU GLY GLN ALA GLU ASP LYS ALA GLU VAL ASP MET ASP THR ASP ALA PRO GLN VAL SER HIS LYS PRO GLY GLY GLU PRO LYS ILE LYS ASN VAL VAL HIS
GLU LEU ARG ILE THR ASN GLN VAL ILE TYR LEU ASN PRO PRO ILE GLU GLU CYS ARG TYR LYS LEU TYR GLN GLU MET PHE ALA TRP LYS MET VAL VAL LEU SER LEU PRO ARG ILE GLN SER GLN ARG TYR GLN VAL GLY VAL HIS TYR GLU LEU THR GLU GLU GLU LYS PHE TYR ARG
ASN ALA LEU THR ARG MET PRO ASP GLY PRO VAL ALA LEU GLU GLU SER TYR SER ALA VAL MET GLY ILE VAL SER GLU VAL GLU GLN TYR VAL LYS VAL TRP LEU GLN TYR GLN CYS LEU TRP ASP MET GLN ALA GLU ASN ILE TYR ASN ARG LEU GLY GLU ASP LEU ASN LYS TRP GLN
ALA LEU LEU VAL GLN ILE ARG LYS ALA ARG GLY THR PHE ASP ASN ALA GLU THR LYS LYS GLU PHE GLY PRO VAL VAL ILE ASP TYR GLY LYS VAL GLN SER LYS VAL ASN LEU LYS TYR ASP SER TRP HIS LYS GLN VAL LEU SER LYS PHE GLY GLN MET LEU GLY SER ASN MET THR
GLU PHE HIS SER GLN ILE SER LYS SER ARG GLY GLU LEU GLU GLN HIS SER VAL ASP THR ALA SER THR SER ASP ALA VAL THR PHE ILE THR TYR VAL GLN SER LEU LYS ARG LYS ILE LYS GLN PHE GLU LYS GLN VAL GLU LEU TYR ARG ASN GLY GLN ARG LEU LEU GLU LYS GLN
ARG PHE GLN PHE PRO PRO SER TRP LEU TYR ILE ASP ASN ILE GLU GLY GLU TRP GLY ALA PHE ASN ASP ILE MET ARG ARG LYS ASP SER ALA ILE GLN GLN GLN VAL ALA ASN LEU GLN MET LYS ILE VAL GLN GLU ASP ARG ALA VAL GLU SER ARG THR THR ASP LEU LEU THR ASP
TRP GLU LYS THR LYS PRO VAL THR GLY ASN LEU ARG PRO GLU GLU ALA LEU GLN ALA LEU THR ILE TYR GLU GLY LYS PHE GLY ARG LEU LYS ASP ASP ARG GLU LYS CYS ALA LYS ALA LYS GLU ALA LEU GLU LEU THR ASP THR GLY LEU LEU SER GLY SER GLU GLU ARG VAL GLN
VAL ALA LEU GLU GLU LEU GLN ASP LEU LYS GLY VAL TRP SER GLU LEU SER LYS VAL TRP GLU GLN ILE ASP GLN MET LYS GLU Q1349 P1350 W1351 V1352 S1353 V1354 Q1355 P1356 R1357 K1358 L1359 N1362 L1363 D1364 A1365 L1370 K1371 A1375 R1378 Y1383 V1386 Q1387 R1388 L1389 L1390
Y1393 M1394 K1395 L1399 L1403 K1404 S1405 L1408 K1409 D1410 R1411 H1412 W1413 R1419 W1424 V1425 V1426 S1427 E1428 L1429 T1430 L1431 I1434 W1435 D1436 V1437 D1438 L1439 N1442 E1443 A1444 I1445 V1446 K1447 L1451 V1452 A1453 Q1454 G1455 E1456 E1460 E1461 F1462 L1463 K1464 W1470 V1478 C1484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L1601 E1602 R1603 L1604 A1605 D1606 L1607 L1608 G1609 K1610 I1611 Q1612 L1619 R1623 P1627 R1628 F1629 D1634 L1637 L1638 E1639 I1640 I1641 L1650 M1657 F1658 I1665 L1666 N1667 E1668 S1671 V1672 V1673 L1674 M1685 T1688 S1691 I1698 N1699 E1700 W1701 L1702 E1708 V1721
V1724 E1725 I1726 F1727 G1728 K1729 S1753 S1915 I1756 L1766 M1769 G1773 V1785 L1789 A1793 L1797 M1798 E1799 Q1800 E1814 H1817 Q1818 A1833 K1834 S1835 F1836 E1837 W1838 L1839 S1840 Q1841 M1842 R1843 F1844 Q1850 Q1856 M1861 A1862 Q1881 T1893 E1897 A1898 R1899
S1903 T1910 G1911 E1914 S1915 V1916 K1917 V1929 F1930 D1933 F1936 D1937 F1938 Q1939 A1940 M1941 V1946 C1949 Q1950 E1959 F1960 N1961 R1962 L1963 E1964 E1965 R1966 M1967 A1970 I1978 D1991 K1992 T1993 S1994 A1995 P1996 L2001 V2006 K2007 W2008 S2009 M2012 R2025 S2026
S2038 T2042 K2043 Q2047 R2060 E2063 A2066 N2067 K2069 I2069 V2070 P2071 S2081 H2085 R2091 S2099 V2103 K2104 R2105 E2106 E2120 A2128 E2129 N2130 L2131 Q2134 I2138 Q2139 S2140 L2156 L2161 Y2170 E2174 M2175 T2176 A2177 L2178 R2179 E2180 E2181
E2188 M2189 Y2190 L2191 T2192 E2197 W2203 K2206 L2210 Y2211 Q2212 I2213 T2214 Q2215 I2216 L2220 M2221 M2222 S2228 M2232 A2233 W2234 R2235 V2236 L2237 L2238 E2242 R2243 E2248 Y2265 L2268 D2269 P2270 N2271 T2272 R2273 I2288 R2292 G2293 E2294 K2297 W2300 D2304
V2307 D2308 P2309 E2310 W2311 V2312 E2313 N2322 T2326 N2329 R2332 L2333 N2338 V2339 R2340 I2341 M2342 F2343 E2344 V2345 T2352 R2358 C2359 G2360 M2361 V2362 W2363 F2364 L2369 M2373 N2377 I2385 P2386 L2387 D2388 E2389 GLY GLU ASP GLU ALA GLN ARG ARG LYS GLY LYS GLU
ASP GLU GLY GLU GLU ALA ALA S2410 P2411 M2412 L2413 Q2416 R2417 D2418 A2419 M2423 N2430 K2435 I2446 L2449 L2452 R2453 Q2464 A2465 C2466 R2467 Q2471 R2488 R2492 Y2493 L2494 V2495 S2503 R2507 L2508 K2509 M2510 R2511 R2519 L2526 P2527 D2536 Y2537 E2538
W2545 W2548 V2562 A2563 A2564 P2565 D2566 V2567 D2573 R2576 T2583 W2584 L2585 P2590 L2591 V2592 P2596 M2603 T2604 L2605 E2616 S2623 T2626 T2627 P2628 Y2641 V2648 V2649 L2650 Q2654 K2657 V2660 N2667 V2679 F2682 I2683 R2684 Q2685 M2686 V2687
E2688 R2694 D2697 K2702 Q2707 F2708 V2709 N2713 P2714 R2720 R2726 R2729 V2733 Y2738 Y2748 M2755 P2760 R2763 T2770 M2773 F2784 Y2792 R2797 E2798 M2799 T2800 R2801 W2802 V2803 R2804 L2810 L2816 P2817 V2818 E2819 G2820 A2829
Q2834 E2839 E2842 R2843 L2855 I2861 D2862 R2863 L2872 K2894 A2895 R2896 Y2901 E2902 E2903 E2904 L2905 V2910 E2914 L2920 I2925 L2933 K2943 T2944 L2956 H2964 R2965 K2966 Y2967 T2968 G2969 F2972 D2973 E2974 D2975 L2976 R2977 L2980 N2987 E2988 K2989
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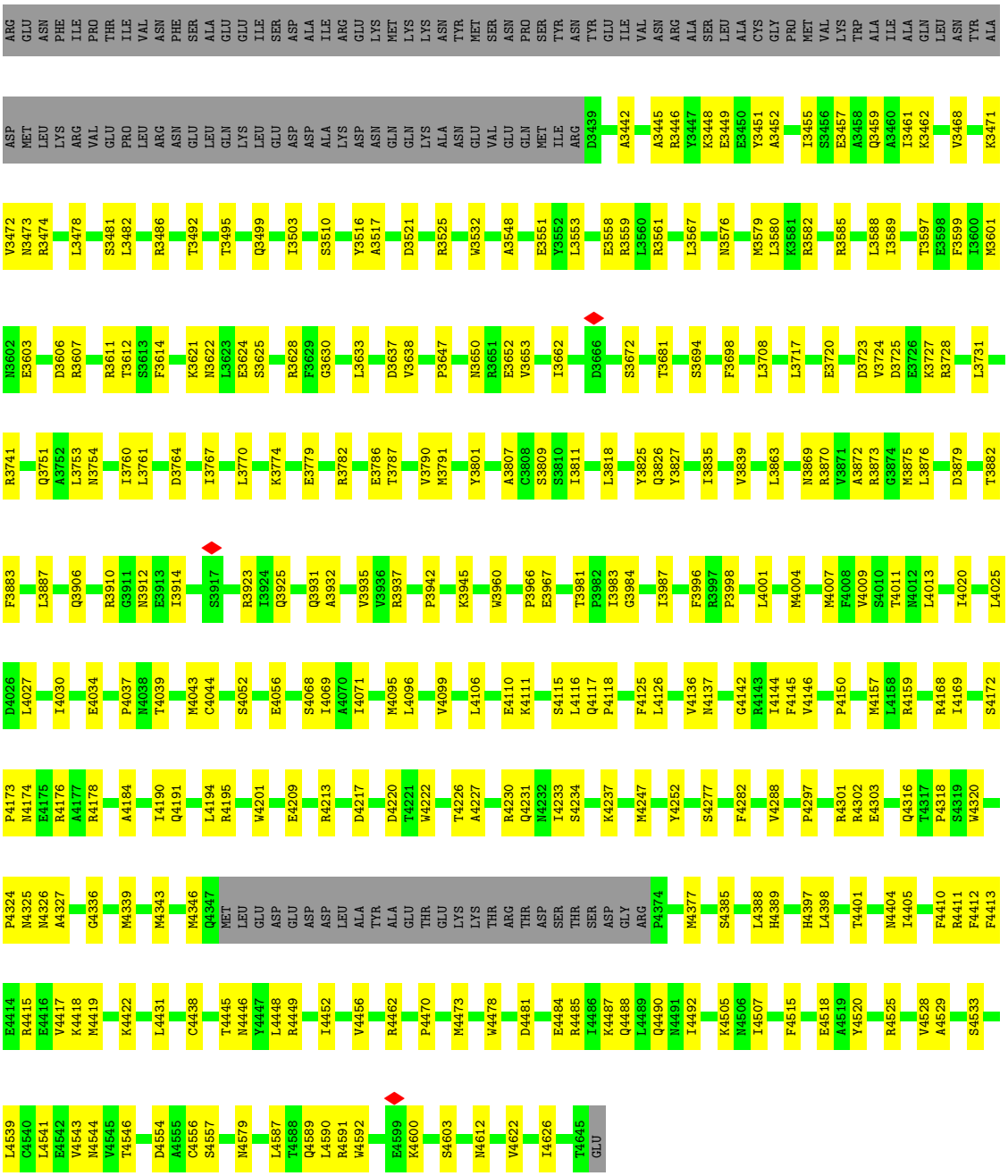
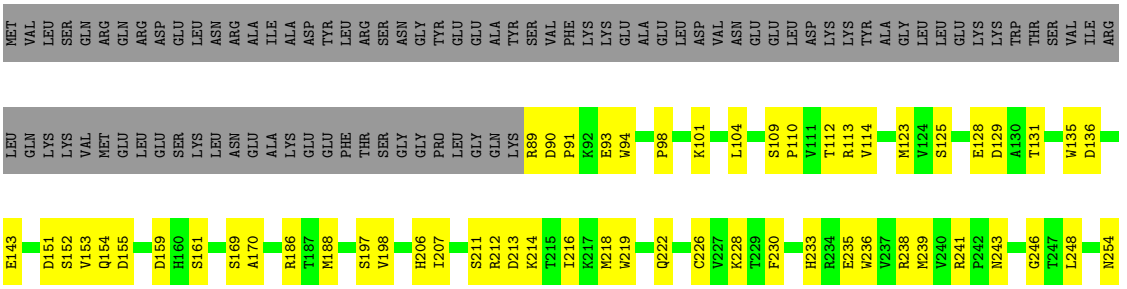
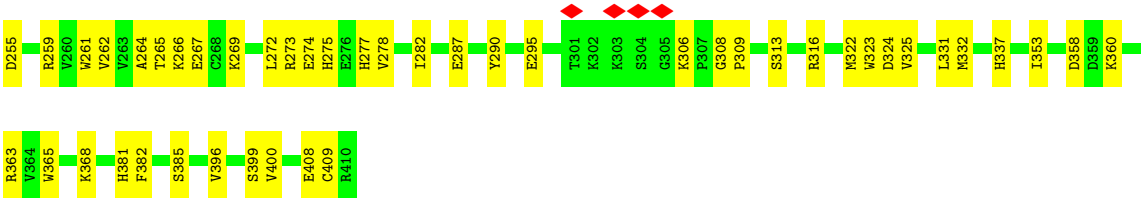
T3081 R3088 C3089 F3094 G3095 D3096 W3097 T3110 S3111 K3112 M3113 D3114 D3124 Y3125 V3129 Y3130 D3131 K3132 L3133 P3134 Q3135 P3136 P3137 R3140 E3141 V3144 F3149 V3150 L3154 T3172 P3173 R3174 H3175 Y3176 L3177 D3178 H3182 Q3197 Q3198 M3199 H3200 L3201 K3207 I3208 T3211
Q3214 V3215 E3216 E3217 L3218 R3219 R3220 R3223 Q3227 E3228 L3229 E3230 V3231 K3232 N3233 K3239 M3243 V3244 K3245 D3246 Q3247 Q3248 E3249 K3252 LYS LYS VAL MET SER GLN GLU ILE GLN GLU GLN LEU HIS LYS GLN GLN GLU VAL ILE ALA ASP LYS GLN MET SER VAL LYS GLU ASP LEU ASP
LYS VAL GLU PRO ALA VAL ILE GLU GLN ASN ALA VAL LYS SER ILE LYS LYS GLN HIS LEU VAL GLU VAL ARG SER MET ALA ASN PRO PRO ALA ALA VAL LYS LEU ALA LEU GLU SER ILE CYS LEU LEU LEU GLY GLU SER THR THR ASP TRP LYS GLN ILE ARG SER ILE ILE MET



• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

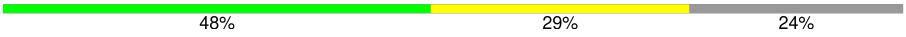
Chain C:

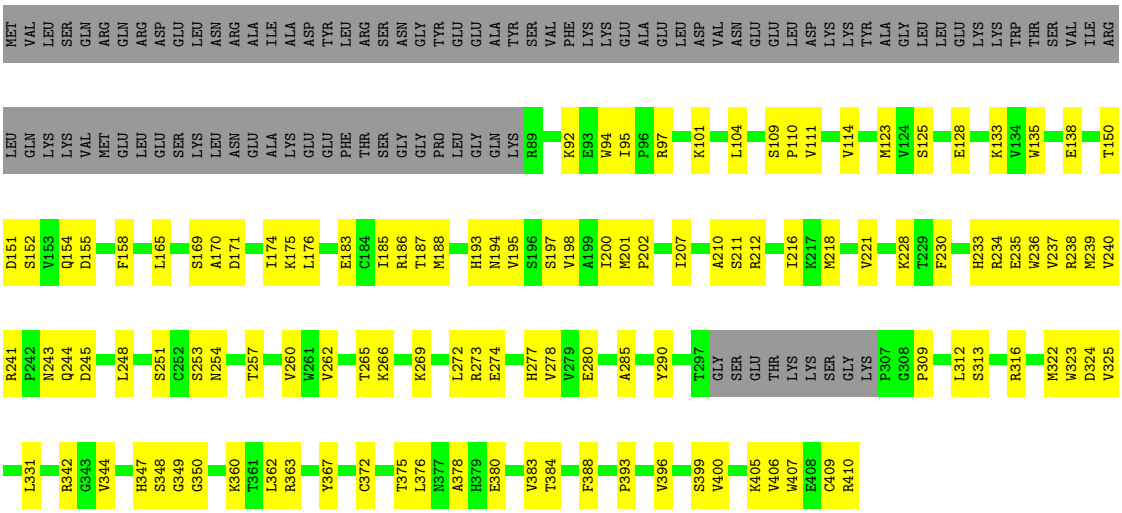




• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

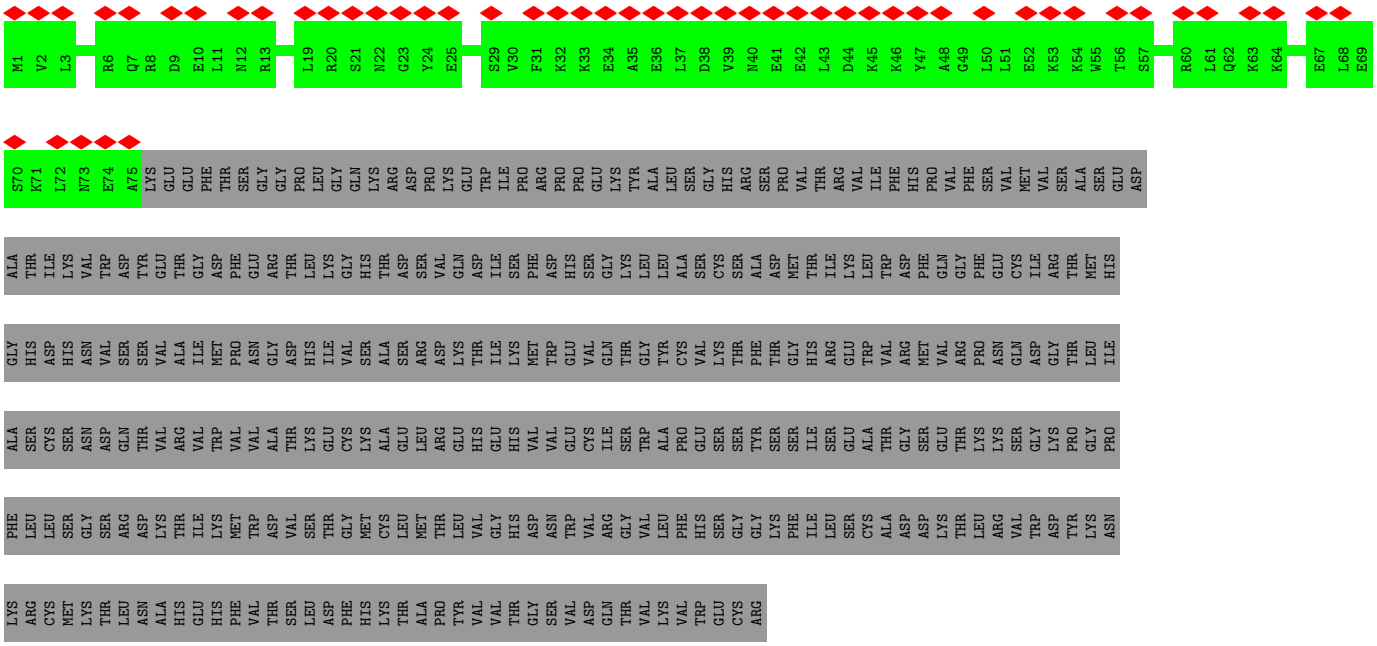
Chain D:





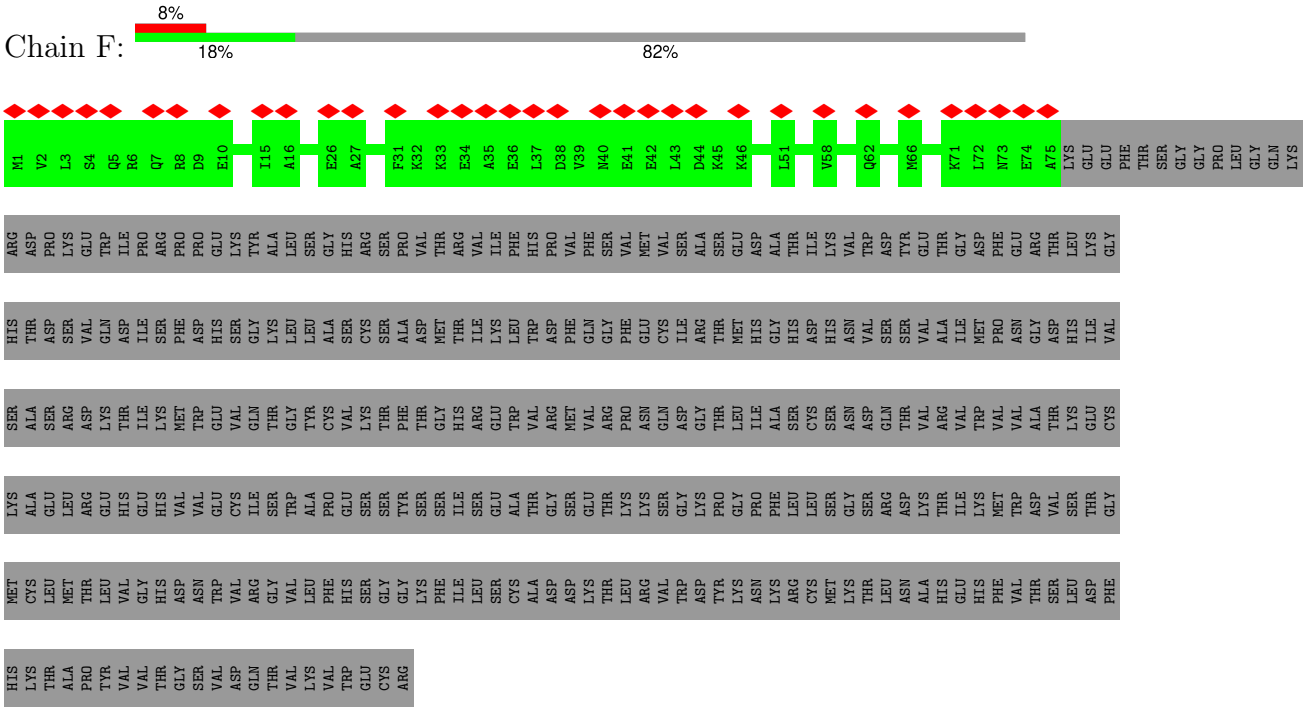
• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

Chain E:



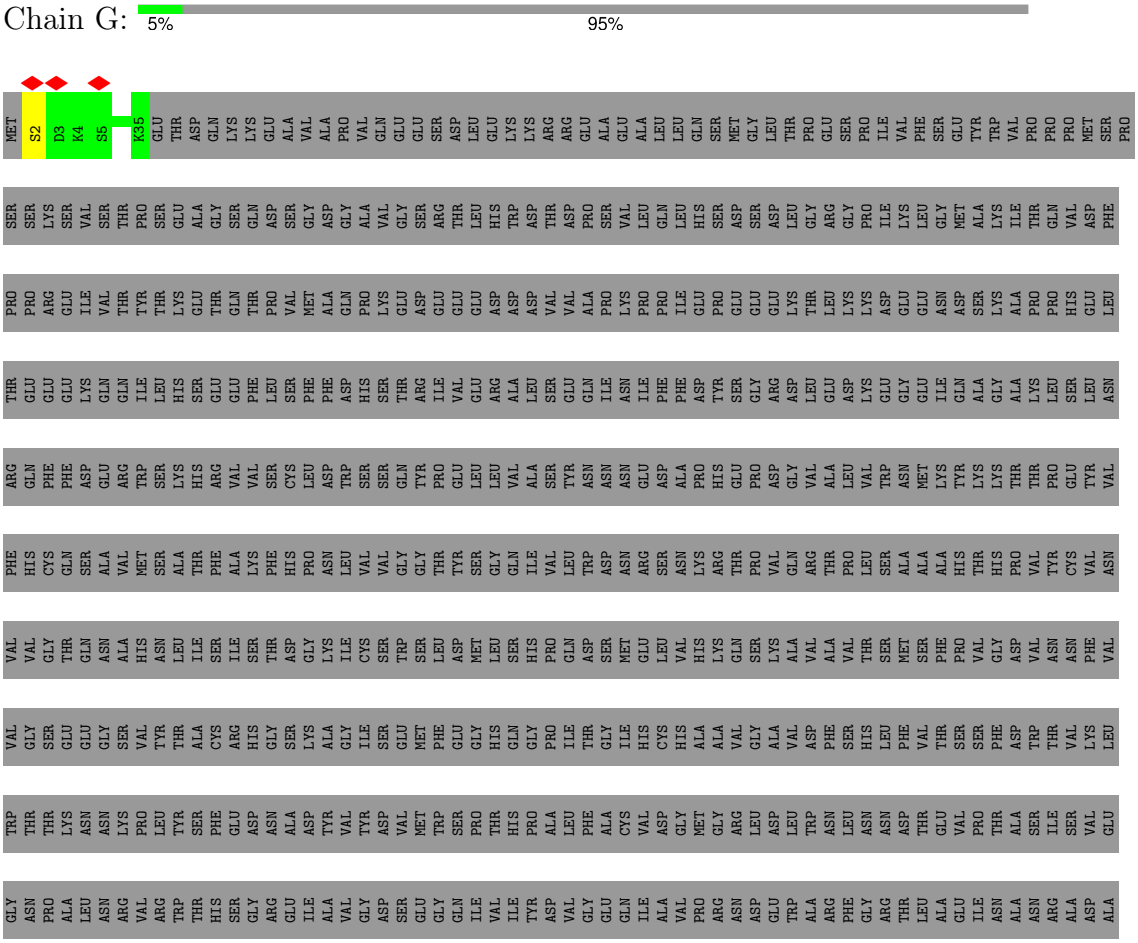
• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

Chain F:



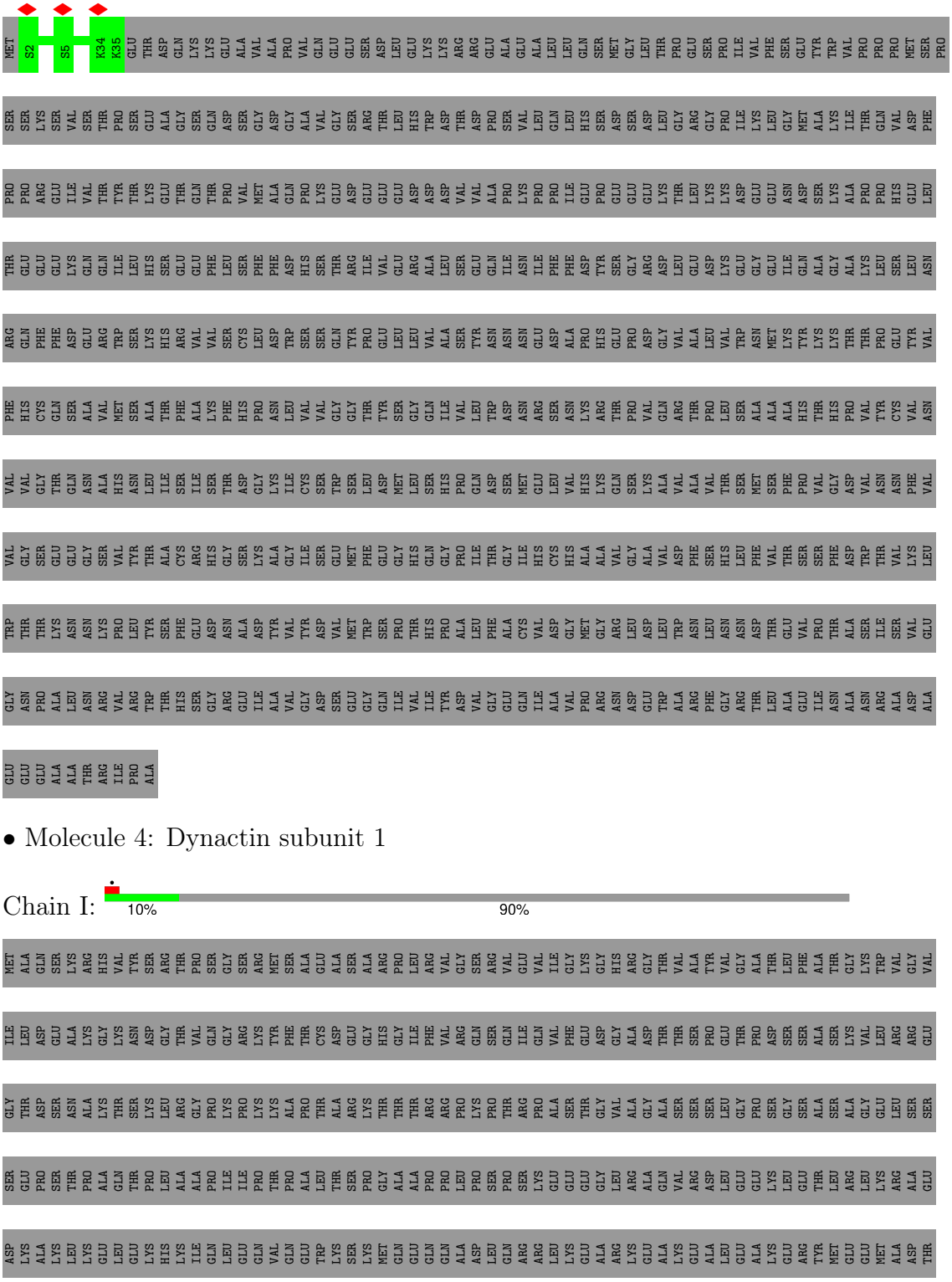
• Molecule 3: Cytoplasmic dynein 1 intermediate chain 2

Chain G:



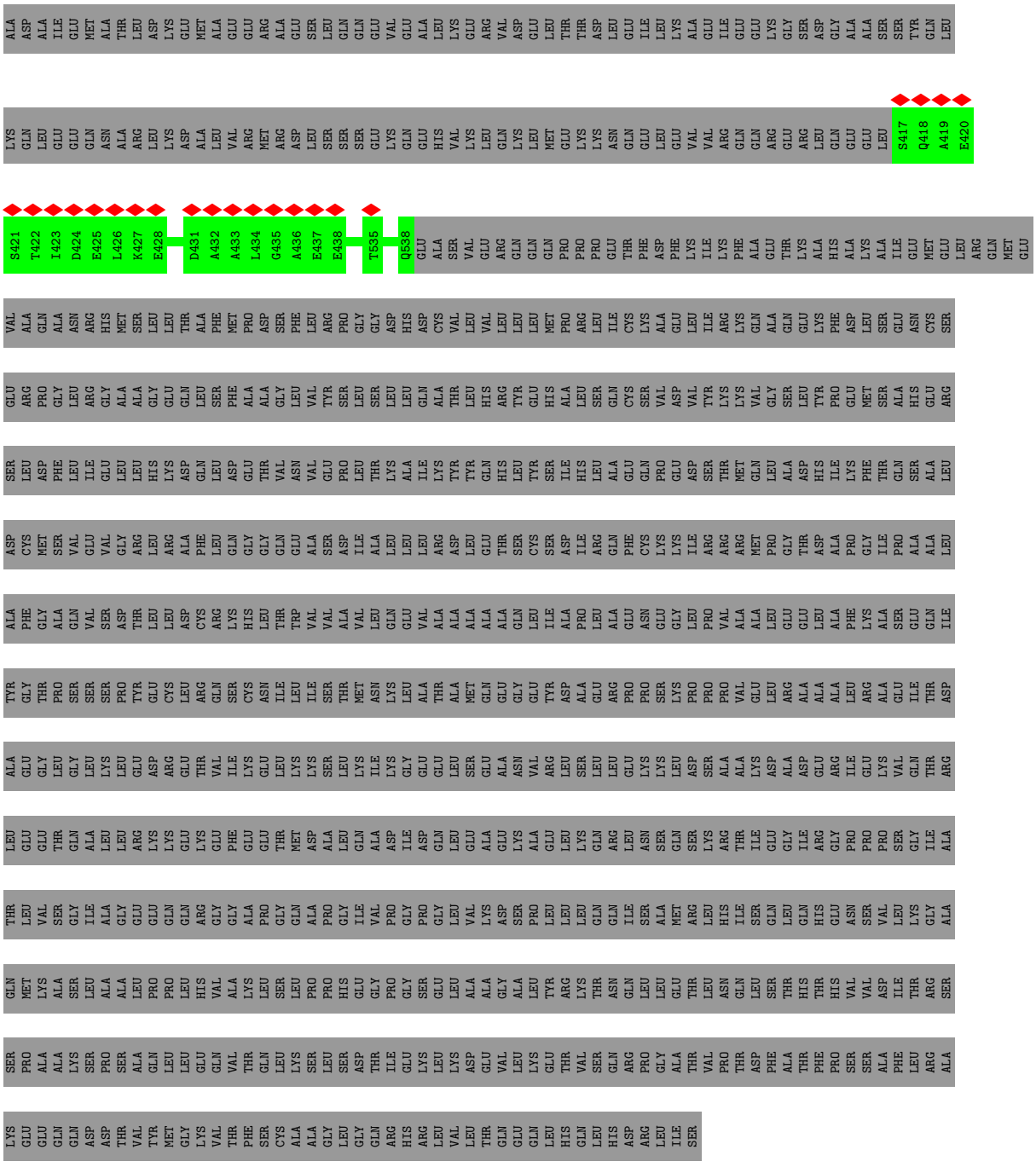
• Molecule 3: Cytoplasmic dynein 1 intermediate chain 2

Chain H:



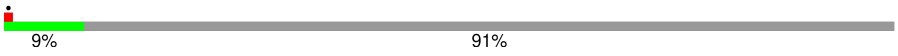
• Molecule 4: Dynactin subunit 1

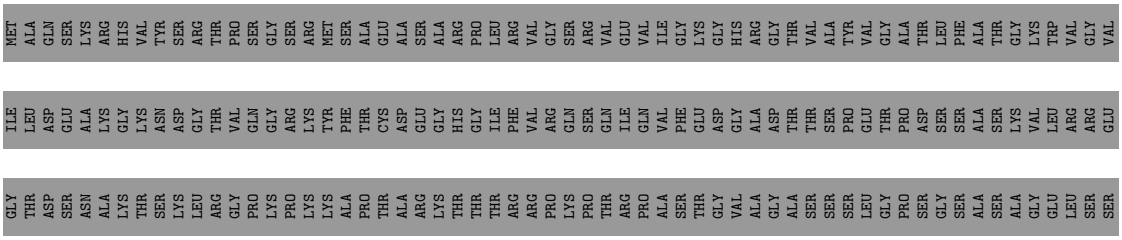
Chain I:

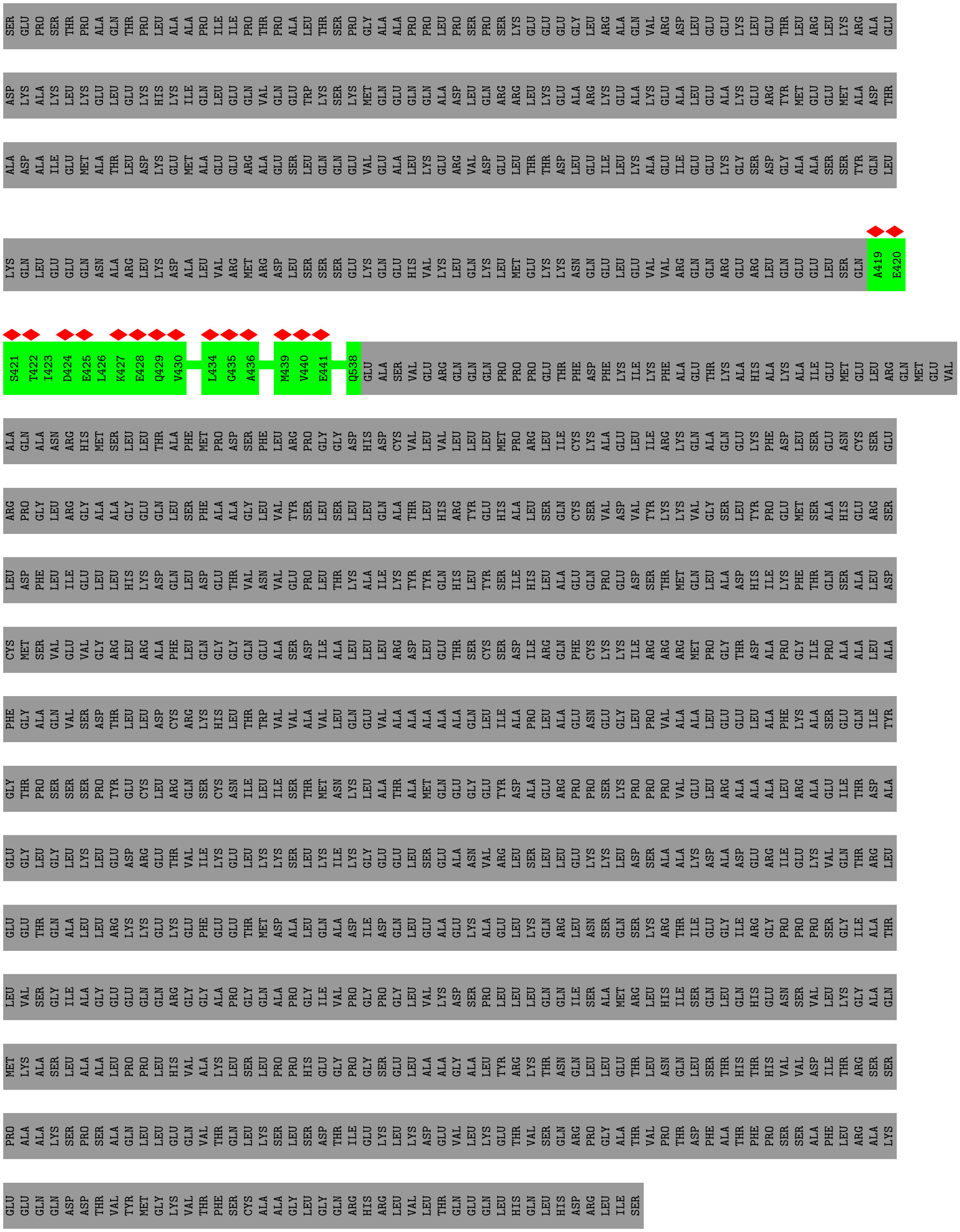


• Molecule 4: Dynactin subunit 1

Chain J:



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ASP LYS ALA LYS LEU LYS GLU LEU GLU LYS HIS LYS ILE GLN LEU GLU GLN VAL GLN GLU TRP LYS SER LYS MET GLN GLU GLN GLN ALA ASP LEU GLN ARG ARG LEU LYS GLU ALA ARG LYS GLU ALA LYS GLU ALA LEU GLU ALA LYS GLU ARG TYR MET GLU GLU MET ALA ASP THR
ALA ASP ALA ILE GLU MET ALA THR LEU ASP LYS GLU MET ALA GLU GLU ARG ALA GLU SER LEU GLN GLN GLU VAL GLU ALA LEU LYS GLU ARG VAL ASP GLU LEU THR THR ASP LEU GLU ILE LEU LYS ALA GLU ILE GLU GLU LYS GLY SER ASP GLY ALA ALA SER SER TYR GLN LEU
LYS GLN LEU GLU GLU GLN ASN ALA ARG LEU LYS ASP ALA LEU VAL ARG MET ARG ASP LEU SER SER SER GLU LYS GLN GLU HIS VAL LYS LEU GLN LYS LEU MET GLU LYS LYS ASN GLN GLU LEU GLU VAL VAL ARG GLN GLN ARG GLU ARG LEU GLN GLU GLU LEU SER GLN A419 E420
S421 T422 I423 D424 E425 L426 K427 E428 Q429 V430 L434 G435 A436 M439 V440 E441 Q538 GLU ALA SER VAL GLU ARG GLN GLN GLN PRO PRO PRO GLU THR PHE ASP PHE LYS ILE LYS PHE ALA GLU THR LYS ALA HIS ALA LYS ALA ILE GLU MET GLU LEU ARG GLN MET GLU VAL
ALA GLN ALA ASN ARG HIS MET SER LEU LEU THR ALA PHE MET PRO ASP SER PHE LEU ARG PRO GLY GLY ASP HIS ASP CYS VAL LEU VAL LEU LEU LEU MET PRO ARG LEU ILE CYS LYS ALA GLU LEU ILE ARG LYS GLN ALA GLN GLU LYS PHE ASP LEU SER GLU ASN CYS SER GLU
ARG PRO GLY LEU ARG GLY ALA ALA GLY GLU GLN LEU SER PHE ALA ALA GLY LEU VAL TYR SER LEU SER LEU LEU GLN ALA THR LEU HIS ARG TYR GLU HIS ALA LEU SER GLN CYS SER VAL ASP VAL TYR LYS LYS VAL GLY SER LEU TYR PRO GLU MET SER ALA HIS GLU ARG SER
LEU ASP PHE LEU ILE GLU LEU LEU HIS LYS ASP GLN LEU ASP GLU THR VAL ASN VAL GLU PRO LEU THR LYS ALA ILE LYS TYR TYR GLN HIS LEU TYR SER ILE HIS LEU ALA GLU GLN PRO GLU ASP SER THR MET GLN LEU ALA ASP HIS ILE LYS PHE THR GLN SER ALA LEU ASP
CYS MET SER VAL GLU VAL GLY ARG LEU ARG ALA PHE LEU GLN GLY GLY GLN GLU ALA SER ASP ILE ALA LEU LEU LEU ARG ASP LEU GLU THR SER CYS SER ASP ILE ARG GLN PHE CYS LYS LYS ILE ARG ARG MET PRO GLY THR ASP ALA PRO GLY ILE PRO ALA ALA LEU ALA
PHE GLY ALA GLN VAL SER ASP THR LEU LEU ASP CYS ARG LYS HIS LEU THR TRP VAL VAL ALA VAL LEU GLN GLU VAL ALA ALA ALA ALA GLN LEU ILE ALA PRO LEU ALA GLU ASN GLU GLY LEU PRO VAL ALA ALA LEU GLU GLU LEU ALA PHE LYS ALA SER GLU GLN ILE TYR
GLY THR PRO SER SER PRO TYR GLU CYS LEU ARG GLN SER CYS ASN ILE LEU ILE SER THR MET ASN LYS LEU ALA THR ALA MET GLN GLU GLY GLU TYR ASP ALA GLU ARG PRO PRO SER LYS PRO PRO PRO VAL GLU LEU ARG ALA ALA ALA LEU ARG ALA GLU ILE THR ASP ALA
GLU GLY LEU GLY LEU LYS LEU GLU ASP ARG GLU THR VAL ILE LYS GLU LEU LYS LYS SER LEU LYS ILE LYS GLY GLU GLU LEU SER GLU ALA ASN VAL ARG LEU SER LEU LEU GLU LYS LYS LEU ASP SER ALA ALA LYS ASP ALA ASP GLU ARG ILE GLU LYS VAL GLN THR ARG LEU
GLU GLU THR GLN ALA LEU LEU ARG LYS LYS GLU LYS GLU PHE GLU GLU THR MET ASP ALA LEU GLN ALA ASP ILE ASP GLN LEU GLU ALA GLU LYS ALA GLU LEU LYS GLN ARG LEU ASN SER GLN SER LYS ARG THR ILE GLU GLY ILE ARG GLY PRO PRO PRO SER GLY ILE ALA THR
LEU VAL SER GLY ILE ALA GLY GLU GLU GLN ARG GLY GLY ALA PRO GLY GLN ALA PRO GLY ILE VAL PRO GLY PRO GLY LEU VAL LYS ASP SER PRO LEU LEU LEU GLN GLN ILE SER ALA MET ARG LEU HIS ILE SER GLN LEU GLN HIS GLU ASN SER VAL LEU LYS GLY ALA GLN
MET LYS ALA SER LEU ALA ALA LEU PRO PRO LEU HIS VAL ALA LYS LEU SER LEU PRO PRO HIS GLU GLY PRO GLY SER GLU LEU ALA ALA GLY ALA LEU TYR ARG LYS THR ASN GLN LEU LEU GLU THR LEU ASN GLN LEU SER THR HIS THR HIS VAL VAL ASP ILE THR ARG SER SER
PRO ALA ALA LYS SER PRO SER ALA GLN LEU LEU GLU GLN VAL THR GLN LEU LYS SER LEU SER ASP THR ILE GLU LYS LEU LYS ASP GLU VAL LEU LYS GLU THR VAL SER GLN ARG PRO GLY ALA THR VAL PRO THR ASP PHE ALA THR PHE PRO SER SER ALA PHE LEU ARG ALA LYS
GLU GLN GLN ASP ASP THR VAL TYR MET GLY LYS VAL THR PHE SER CYS ALA ALA GLY LEU GLY GLN ARG HIS ARG LEU VAL LEU THR GLN GLU GLN LEU HIS GLN LEU HIS ASP ARG LEU ILE SER

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	90591	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS GLACIOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2600	Depositor
Magnification	45000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.483	Depositor
Minimum map value	-0.187	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.019	Depositor
Recommended contour level	0.08	Depositor
Map size (Å)	444.4032, 444.4032, 444.4032	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1573, 1.1573, 1.1573	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ATP, ADP, MG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.12	0/25169	0.32	0/34101
1	B	0.12	0/25177	0.30	0/34112
2	C	0.12	0/2624	0.39	0/3555
2	D	0.10	0/2560	0.31	0/3470
2	E	0.06	0/372	0.20	0/518
2	F	0.06	0/372	0.17	0/518
3	G	0.05	0/169	0.14	0/235
3	H	0.05	0/169	0.13	0/235
4	I	0.21	0/606	0.30	0/845
4	J	0.35	0/601	0.44	0/838
All	All	0.12	0/57819	0.32	0/78427

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	24650	0	24762	653	0
1	B	24658	0	24766	577	0
2	C	2557	0	2487	71	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	2494	0	2419	89	0
2	E	373	0	172	0	0
2	F	373	0	172	0	0
3	G	170	0	73	1	0
3	H	170	0	73	0	0
4	I	607	0	285	0	0
4	J	602	0	282	0	0
5	A	81	0	36	9	0
5	B	81	0	36	10	0
6	A	31	0	12	4	0
6	B	31	0	12	6	0
7	A	2	0	0	0	0
7	B	2	0	0	0	0
All	All	56882	0	55587	1380	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 12.

The worst 5 of 1380 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:275:HIS:HE2	2:C:313:SER:HG	1.16	0.93
1:A:1892:MET:HE1	1:A:1902:GLY:HA3	1.53	0.90
1:A:2096:VAL:HG22	1:A:2144:THR:HG21	1.53	0.90
1:A:2633:LYS:HZ3	1:A:3019:GLY:H	1.20	0.88
1:A:4473:MET:HE1	1:A:4478:TRP:HB2	1.58	0.84

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	3056/4646 (66%)	2984 (98%)	72 (2%)	0	100	100
1	B	3057/4646 (66%)	2974 (97%)	83 (3%)	0	100	100
2	C	320/410 (78%)	301 (94%)	19 (6%)	0	100	100
2	D	309/410 (75%)	294 (95%)	15 (5%)	0	100	100
2	E	73/410 (18%)	73 (100%)	0	0	100	100
2	F	73/410 (18%)	73 (100%)	0	0	100	100
3	G	32/638 (5%)	32 (100%)	0	0	100	100
3	H	32/638 (5%)	32 (100%)	0	0	100	100
4	I	120/1281 (9%)	120 (100%)	0	0	100	100
4	J	119/1281 (9%)	119 (100%)	0	0	100	100
All	All	7191/14770 (49%)	7002 (97%)	189 (3%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	2720/4125 (66%)	2720 (100%)	0	100	100
1	B	2721/4125 (66%)	2721 (100%)	0	100	100
2	C	287/364 (79%)	286 (100%)	1 (0%)	91	91
2	D	280/364 (77%)	280 (100%)	0	100	100
All	All	6008/8978 (67%)	6007 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	C	222	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 71 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	2549	GLN
1	B	3061	ASN
1	B	3877	HIS
1	A	2707	GLN
1	A	2685	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains (i)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
6	ATP	A	4702	7	28,33,33	0.63	0	34,52,52	0.60	1 (2%)
5	ADP	B	4703	-	24,29,29	0.90	1 (4%)	29,45,45	1.22	2 (6%)
5	ADP	B	4701	7	24,29,29	0.89	0	29,45,45	1.23	3 (10%)
5	ADP	A	4704	-	24,29,29	0.89	0	29,45,45	1.19	2 (6%)
6	ATP	B	4702	7	28,33,33	0.70	0	34,52,52	0.60	1 (2%)
5	ADP	A	4701	7	24,29,29	0.93	1 (4%)	29,45,45	1.17	3 (10%)
5	ADP	A	4703	-	24,29,29	0.88	0	29,45,45	1.27	3 (10%)
5	ADP	B	4704	-	24,29,29	0.88	0	29,45,45	1.19	2 (6%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	ATP	A	4702	7	-	7/18/38/38	0/3/3/3
5	ADP	B	4703	-	-	0/12/32/32	0/3/3/3
5	ADP	B	4701	7	-	2/12/32/32	0/3/3/3
5	ADP	A	4704	-	-	1/12/32/32	0/3/3/3
6	ATP	B	4702	7	-	5/18/38/38	0/3/3/3
5	ADP	A	4701	7	-	0/12/32/32	0/3/3/3
5	ADP	A	4703	-	-	0/12/32/32	0/3/3/3
5	ADP	B	4704	-	-	2/12/32/32	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	4701	ADP	C2-N3	2.18	1.35	1.32
5	B	4703	ADP	O4'-C1'	2.13	1.43	1.40

The worst 5 of 17 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	B	4704	ADP	N3-C2-N1	-3.71	123.63	128.67
5	B	4703	ADP	N3-C2-N1	-3.68	123.67	128.67
5	A	4704	ADP	N3-C2-N1	-3.67	123.70	128.67
5	A	4703	ADP	N3-C2-N1	-3.64	123.74	128.67
5	B	4701	ADP	N3-C2-N1	-3.51	123.90	128.67

There are no chirality outliers.

5 of 17 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	4701	ADP	C5'-O5'-PA-O2A
5	B	4701	ADP	C5'-O5'-PA-O3A
6	A	4702	ATP	C5'-O5'-PA-O1A
6	A	4702	ATP	C5'-O5'-PA-O2A
6	A	4702	ATP	C5'-O5'-PA-O3A

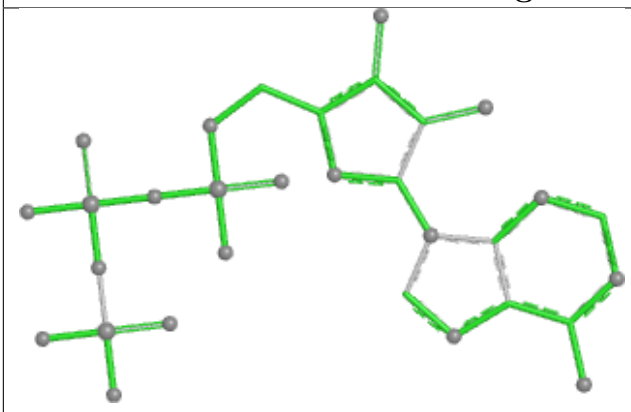
There are no ring outliers.

8 monomers are involved in 29 short contacts:

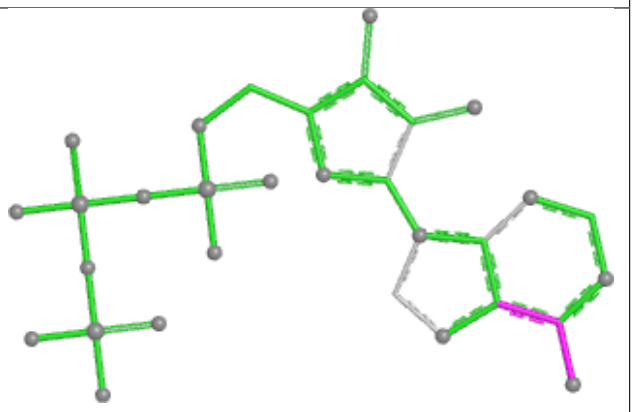
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	4702	ATP	4	0
5	B	4703	ADP	3	0
5	B	4701	ADP	5	0
5	A	4704	ADP	3	0
6	B	4702	ATP	6	0
5	A	4701	ADP	3	0
5	A	4703	ADP	3	0
5	B	4704	ADP	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

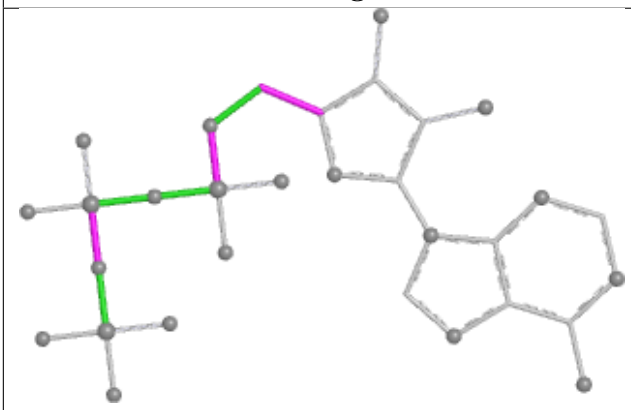
Ligand ATP A 4702



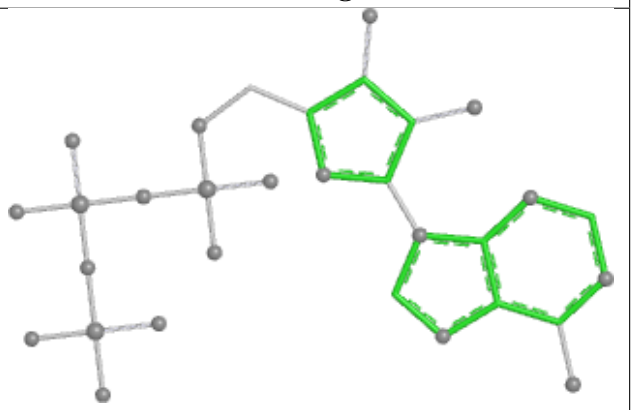
Bond lengths



Bond angles

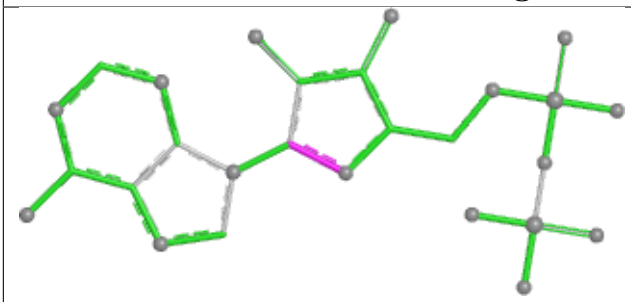


Torsions

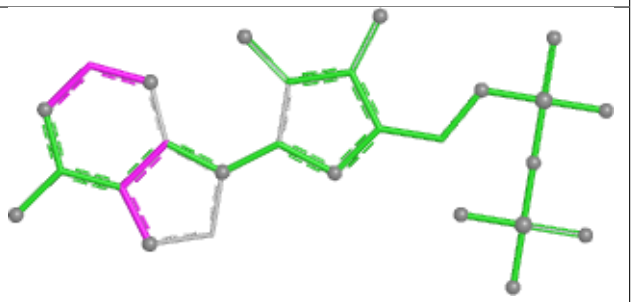


Rings

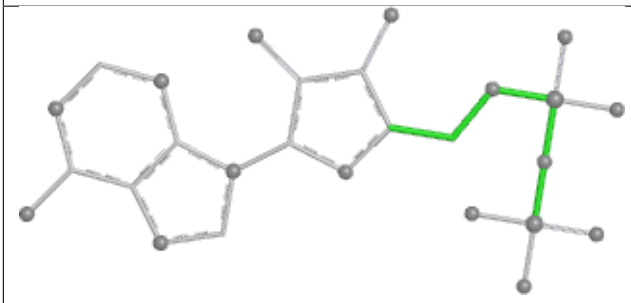
Ligand ADP B 4703



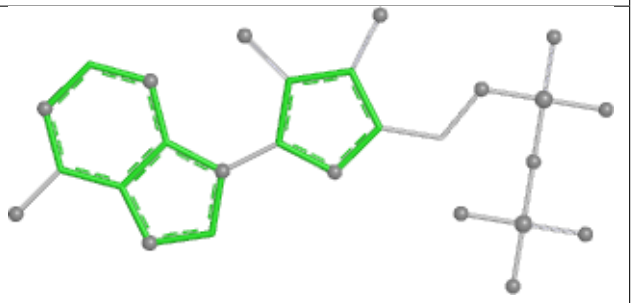
Bond lengths



Bond angles

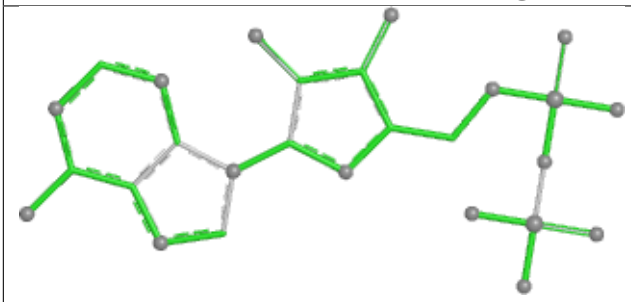


Torsions

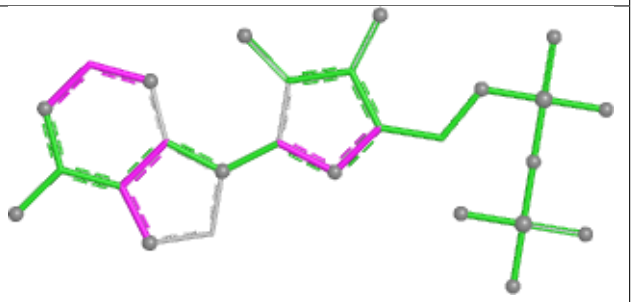


Rings

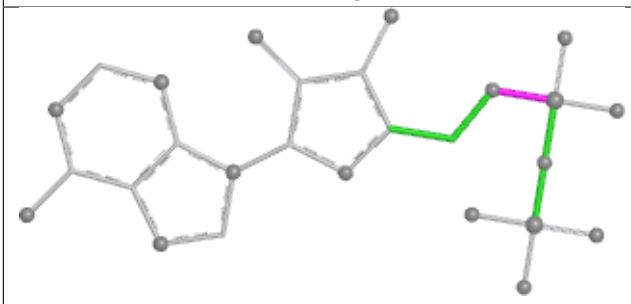
Ligand ADP B 4701



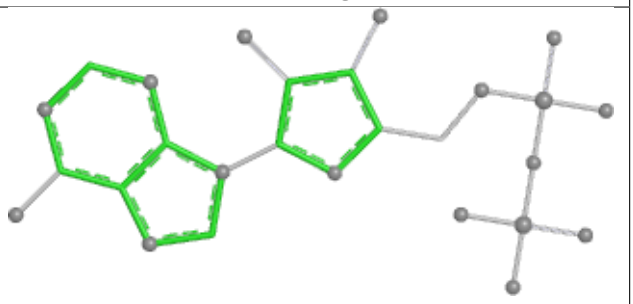
Bond lengths



Bond angles

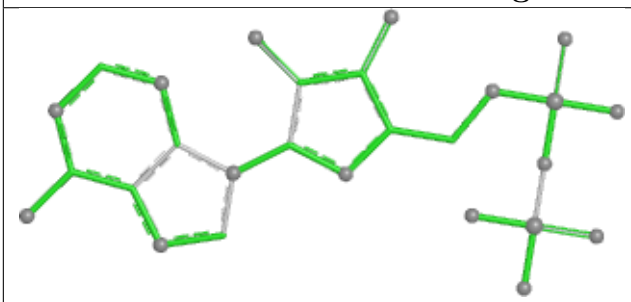


Torsions

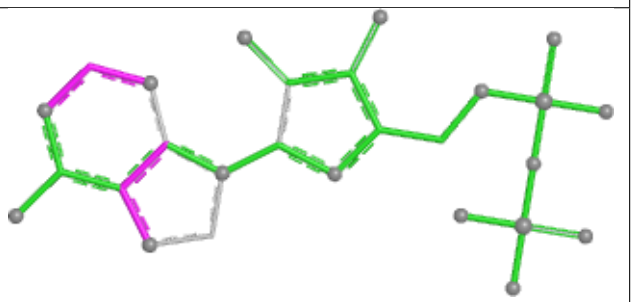


Rings

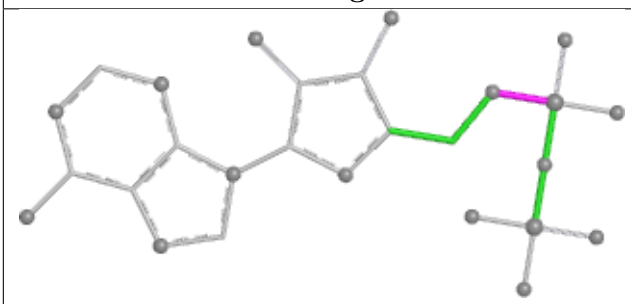
Ligand ADP A 4704



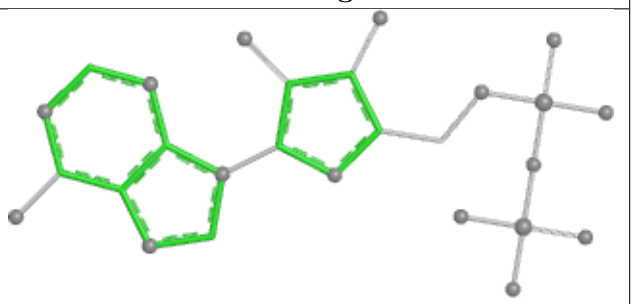
Bond lengths



Bond angles

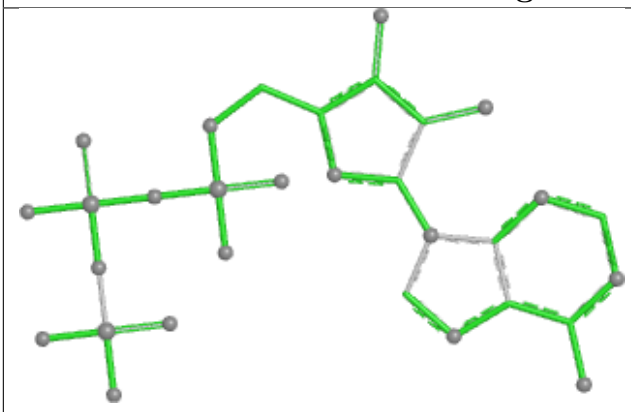


Torsions

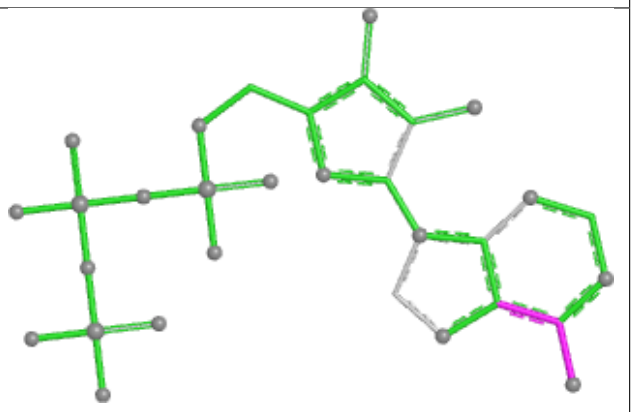


Rings

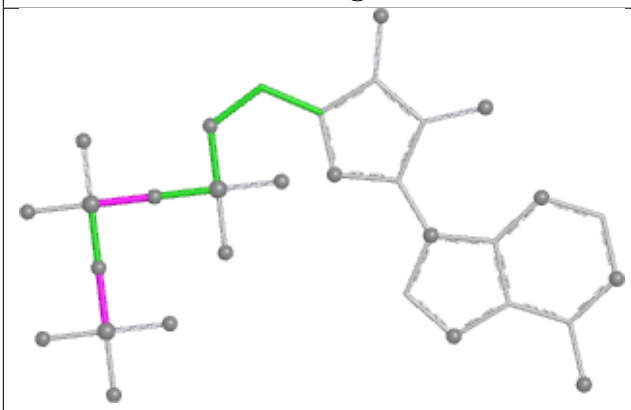
Ligand ATP B 4702



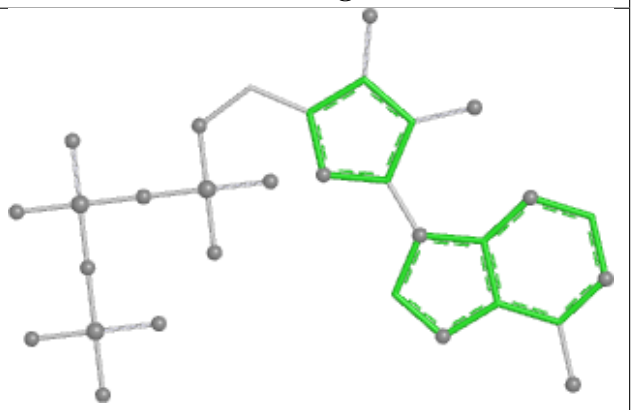
Bond lengths



Bond angles

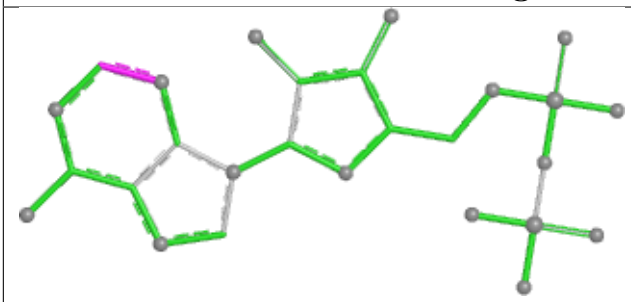


Torsions

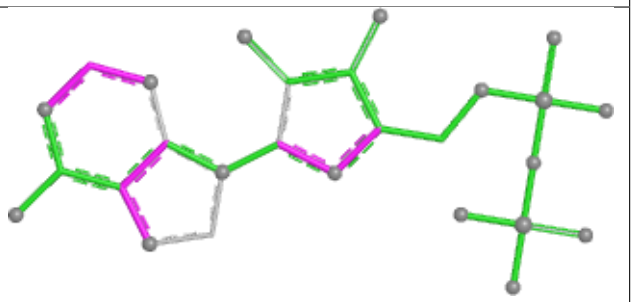


Rings

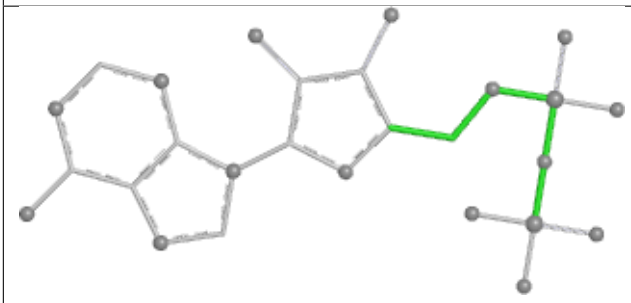
Ligand ADP A 4701



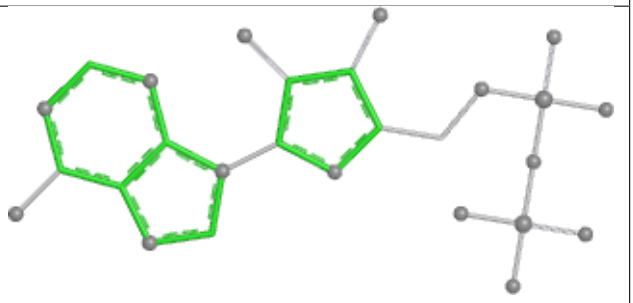
Bond lengths



Bond angles

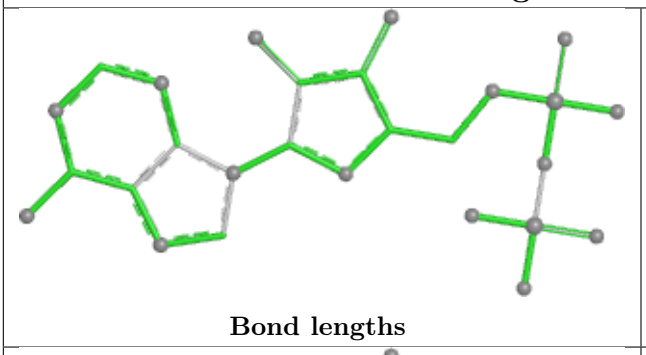


Torsions

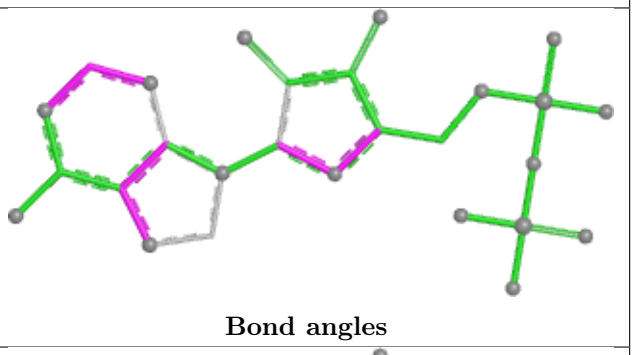


Rings

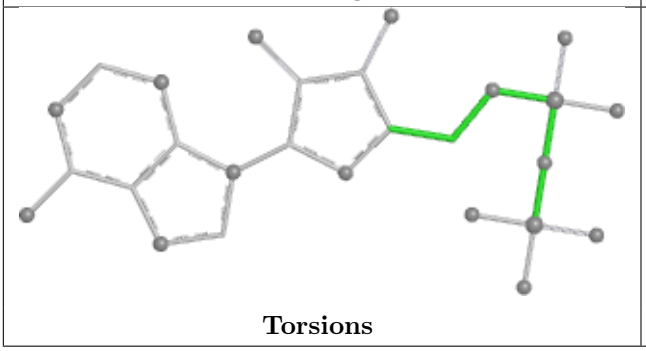
Ligand ADP A 4703



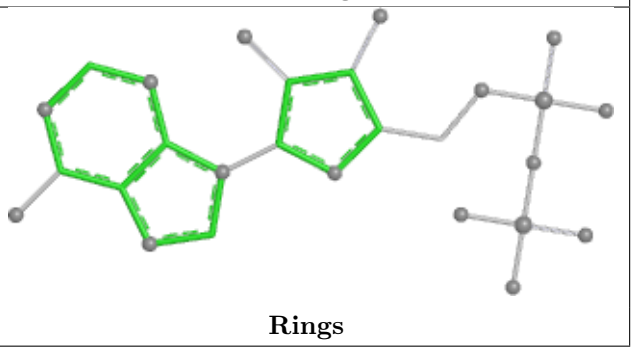
Bond lengths



Bond angles

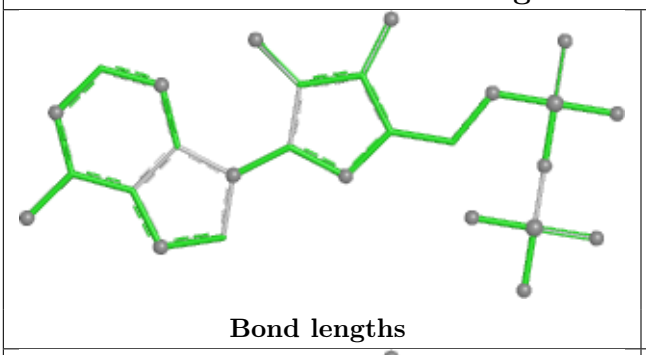


Torsions

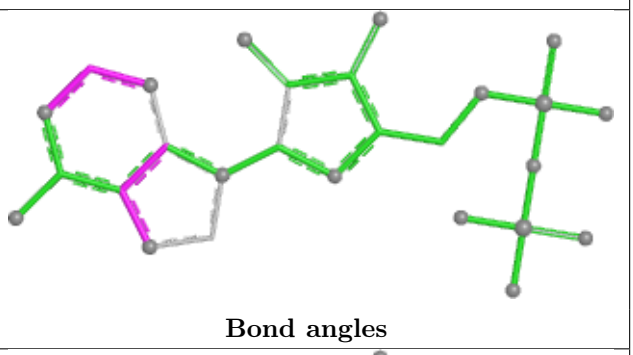


Rings

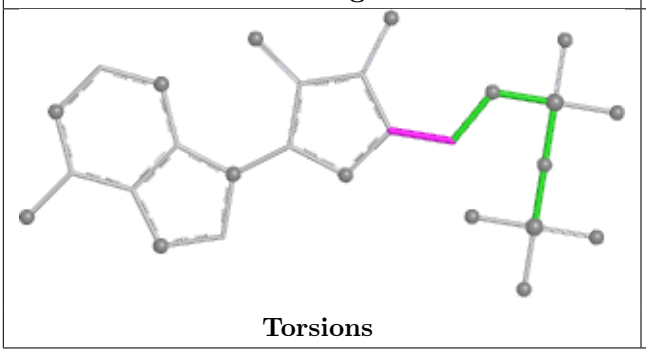
Ligand ADP B 4704



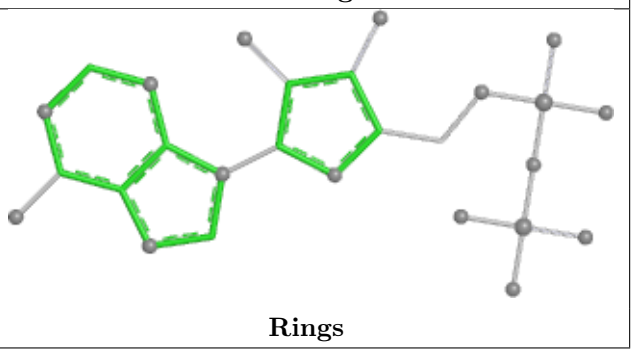
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

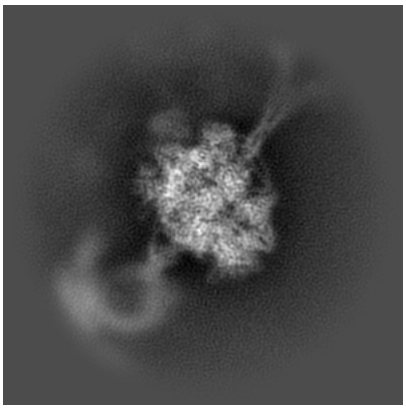
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-73173. These allow visual inspection of the internal detail of the map and identification of artifacts.

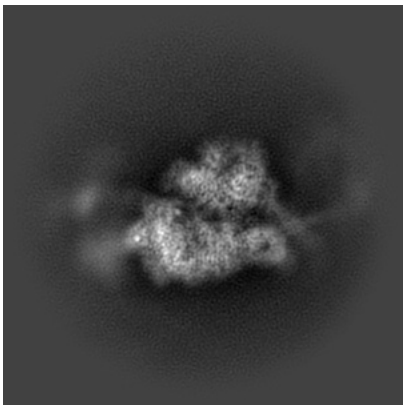
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

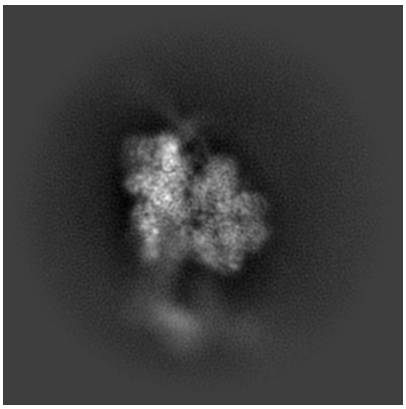
6.1.1 Primary map



X

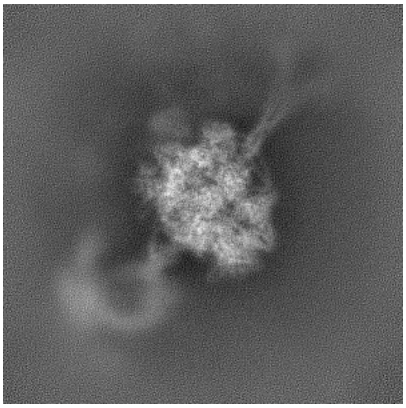


Y

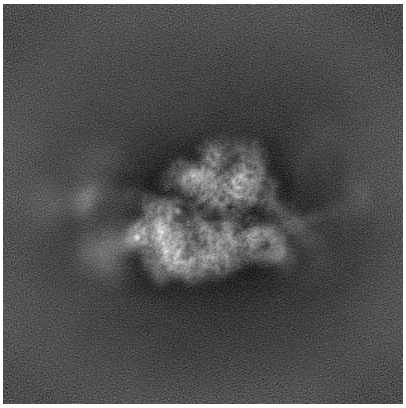


Z

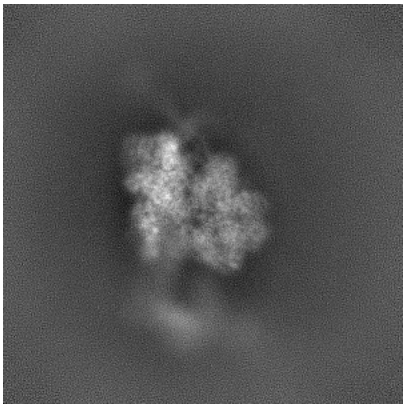
6.1.2 Raw map



X



Y

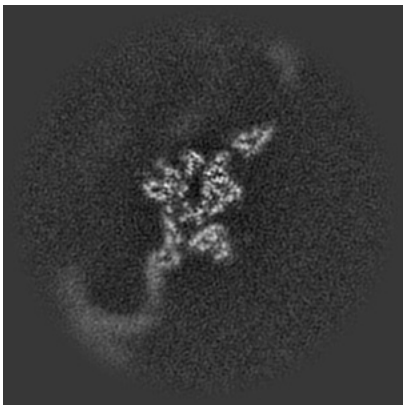


Z

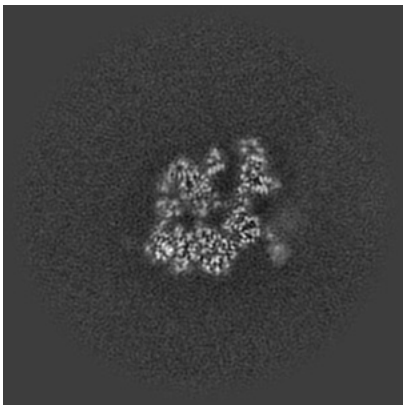
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

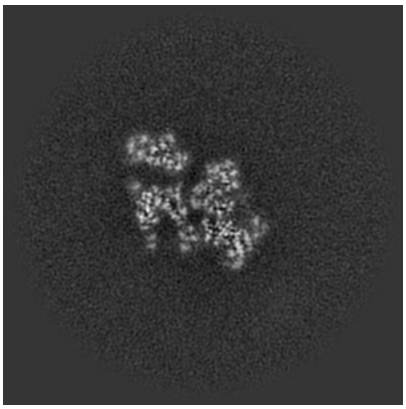
6.2.1 Primary map



X Index: 192

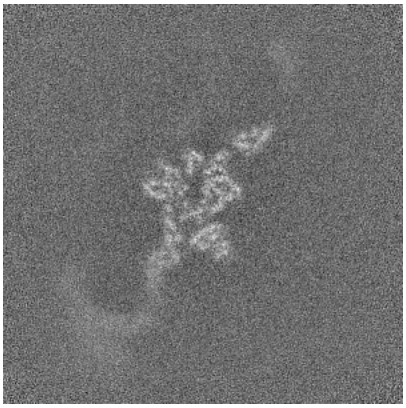


Y Index: 192

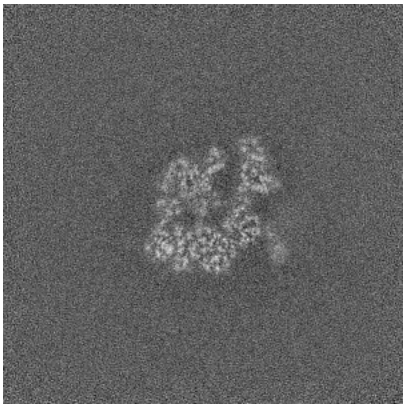


Z Index: 192

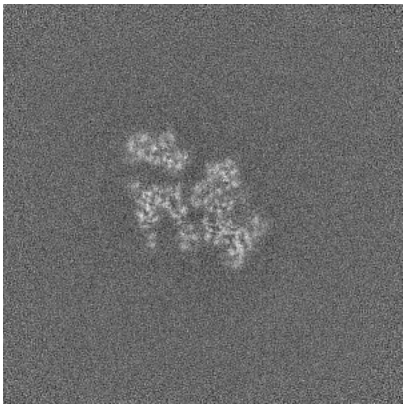
6.2.2 Raw map



X Index: 192



Y Index: 192

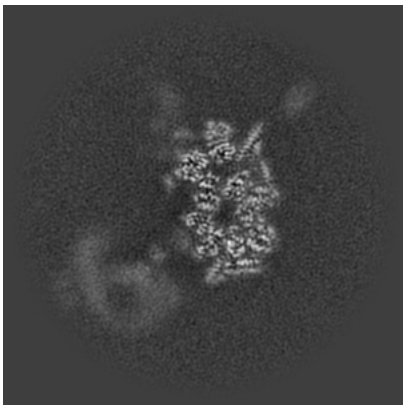


Z Index: 192

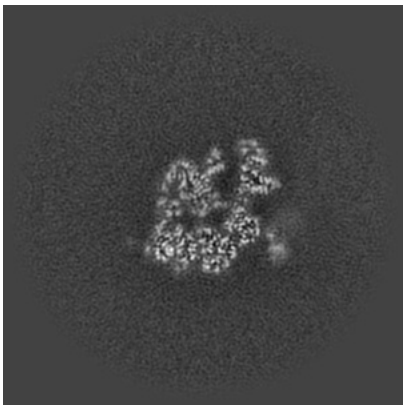
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

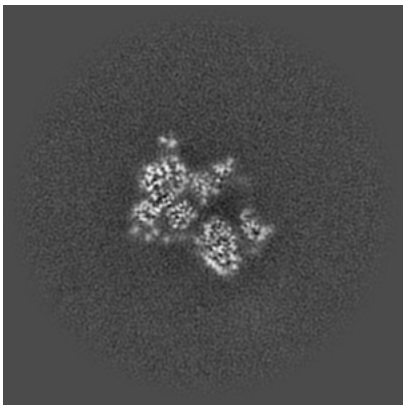
6.3.1 Primary map



X Index: 157

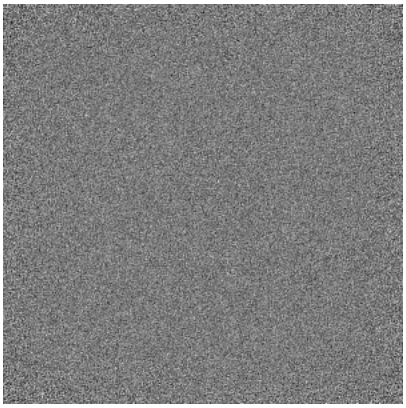


Y Index: 193

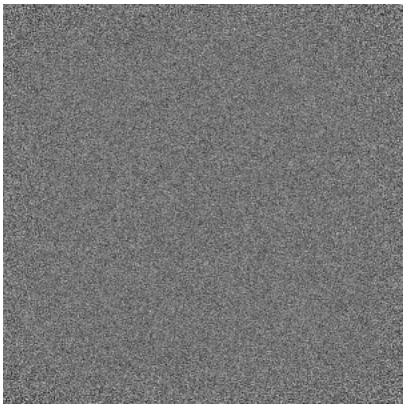


Z Index: 214

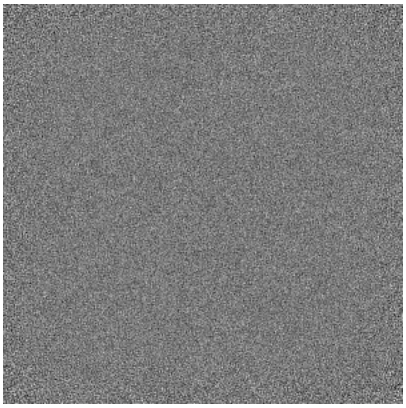
6.3.2 Raw map



X Index: 0



Y Index: 0

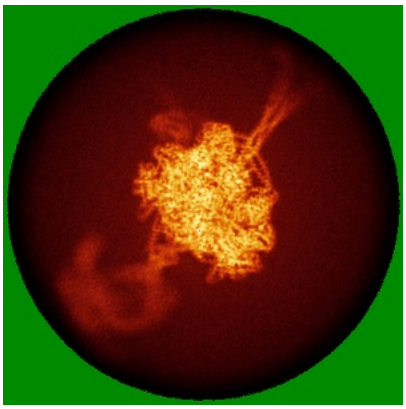


Z Index: 0

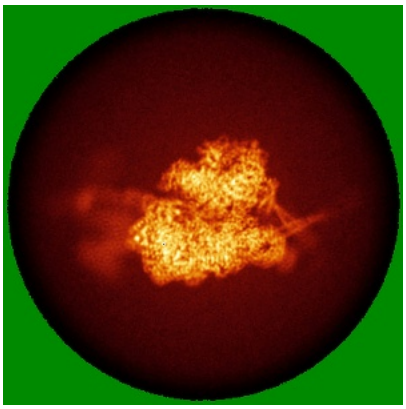
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

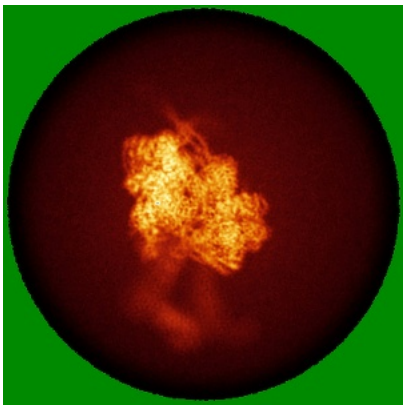
6.4.1 Primary map



X

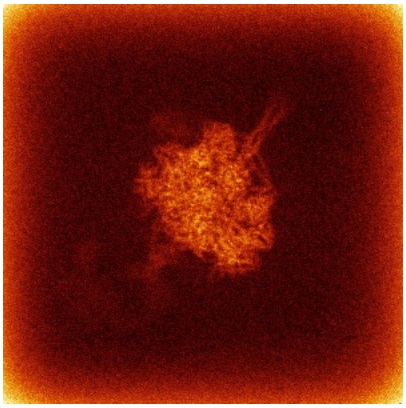


Y

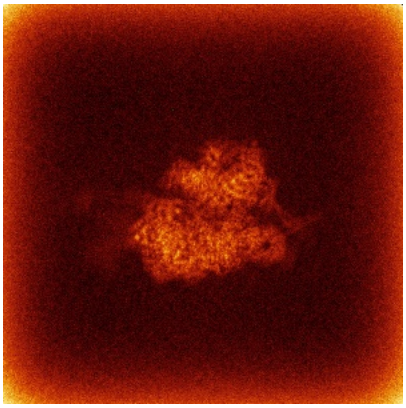


Z

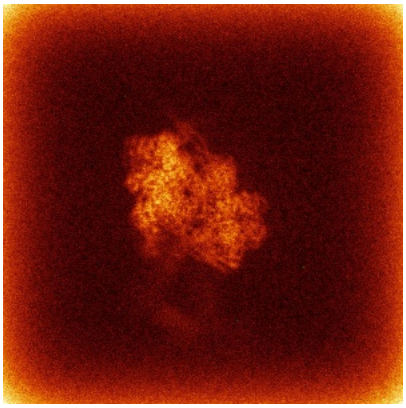
6.4.2 Raw map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.08. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

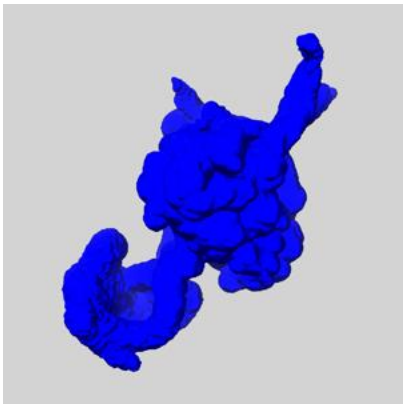
6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

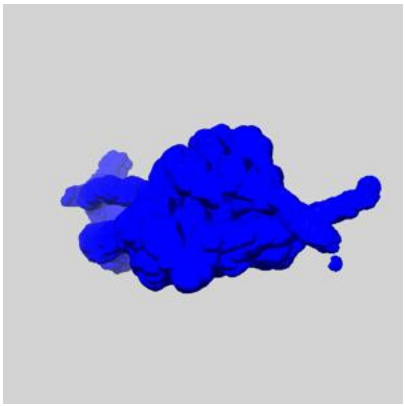
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

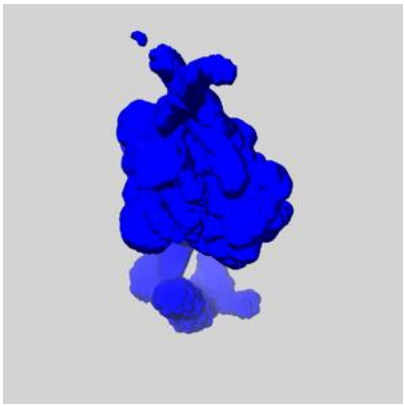
6.6.1 emd_73173_msk_1.map (i)



X



Y

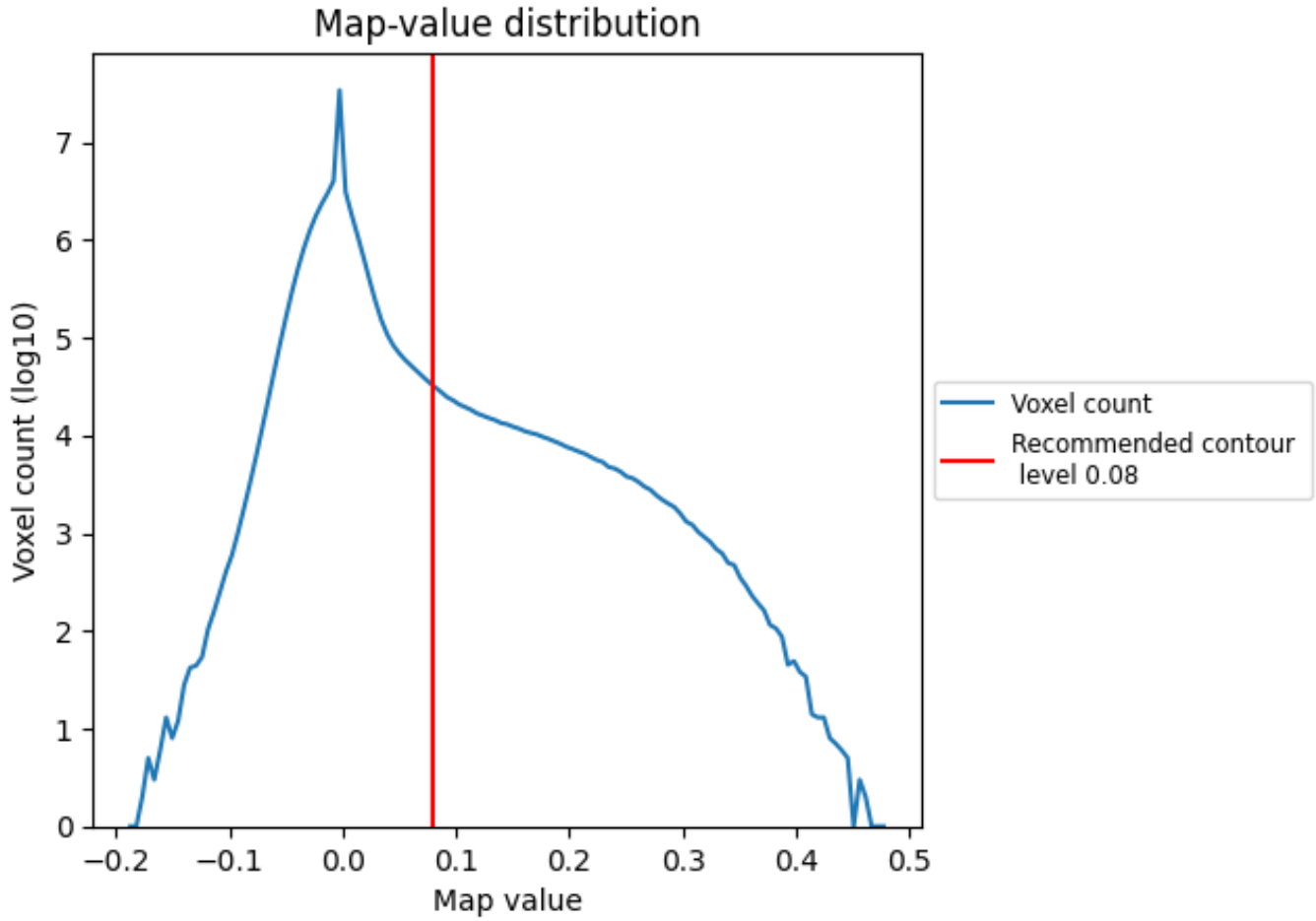


Z

7 Map analysis

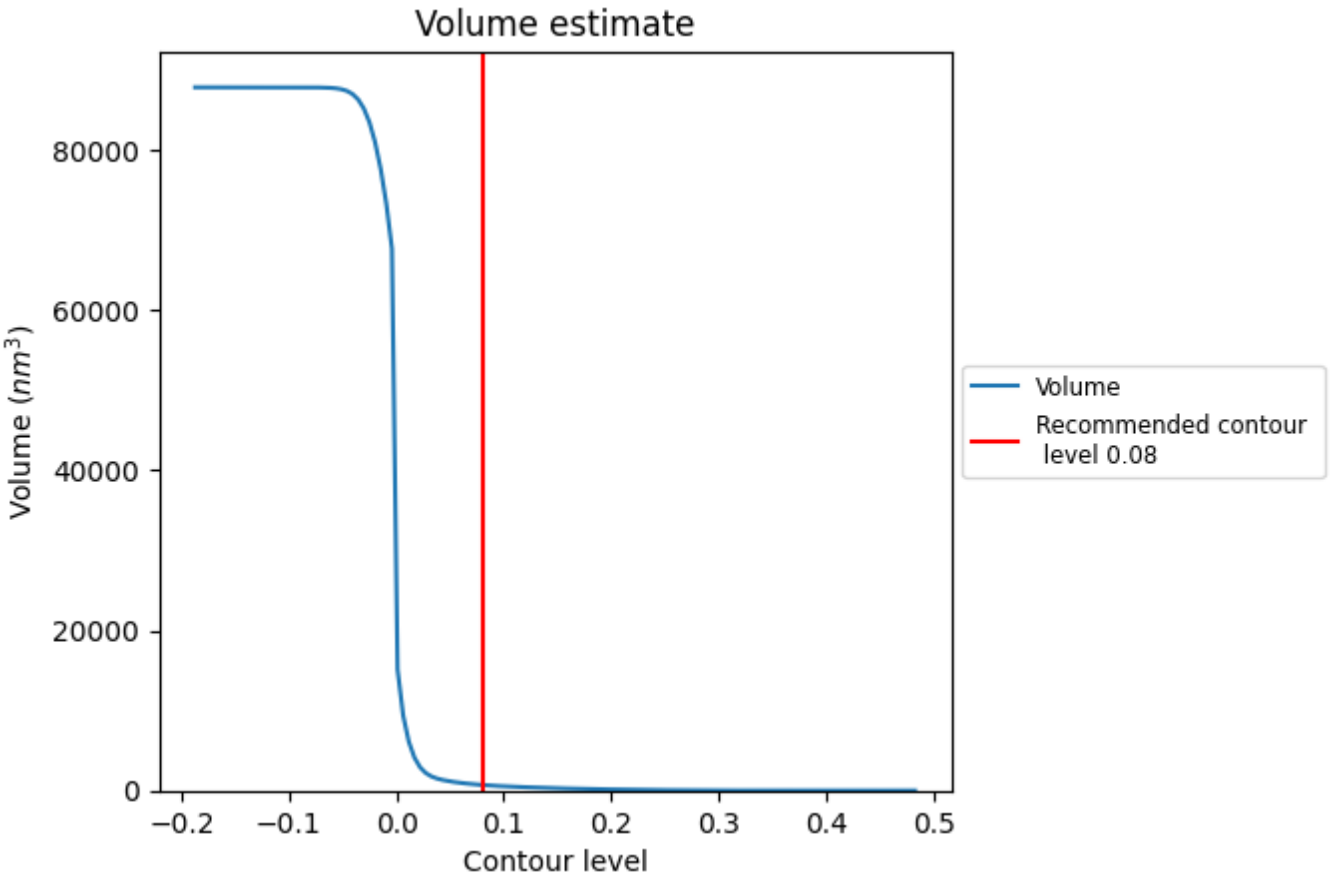
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

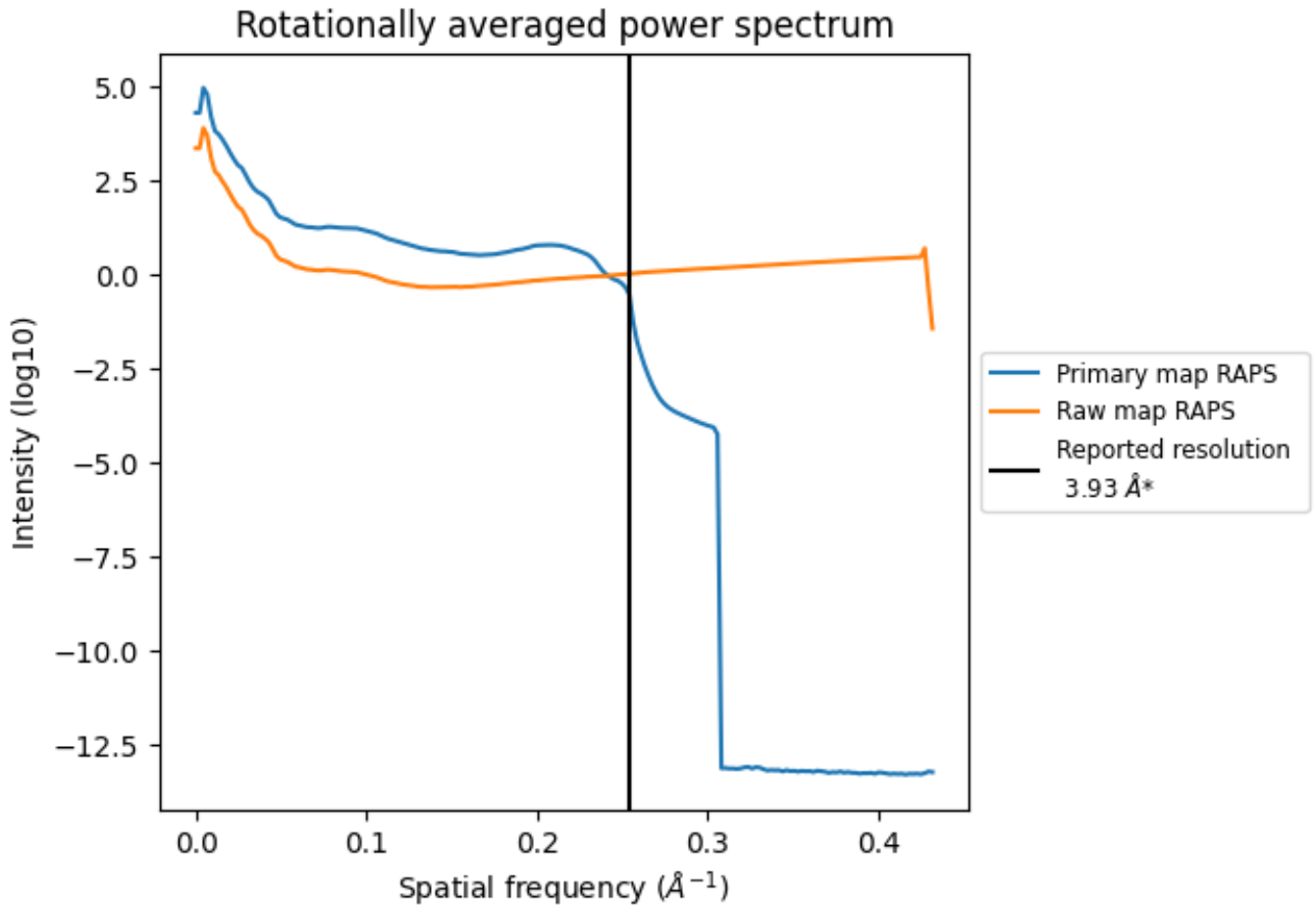
7.2 Volume estimate (i)



The volume at the recommended contour level is 698 nm^3; this corresponds to an approximate mass of 631 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

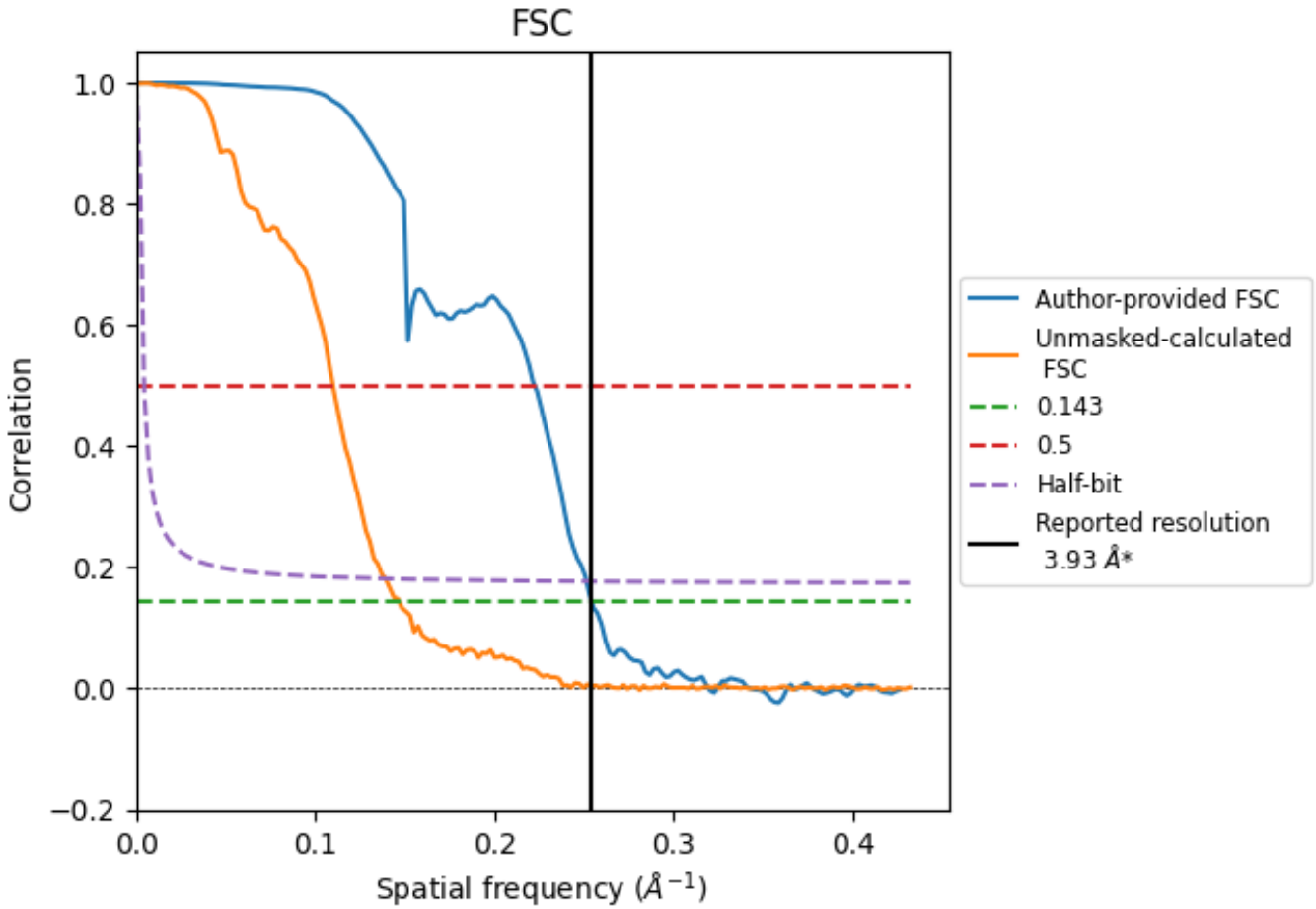


*Reported resolution corresponds to spatial frequency of 0.254 $Å^{-1}$

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.254 Å^{-1}

8.2 Resolution estimates (i)

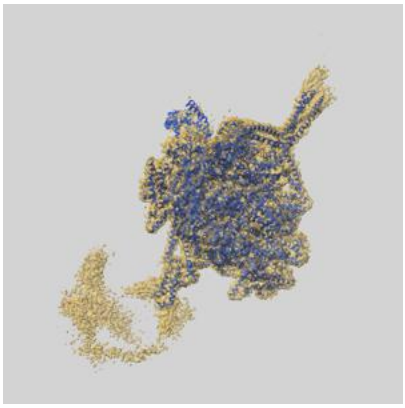
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.93	-	-
Author-provided FSC curve	3.93	4.49	3.98
Unmasked-calculated*	6.81	9.10	7.18

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.81 differs from the reported value 3.93 by more than 10 %

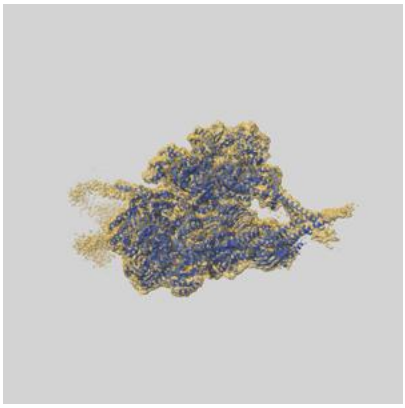
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-73173 and PDB model 9YNC. Per-residue inclusion information can be found in section 3 on page 7.

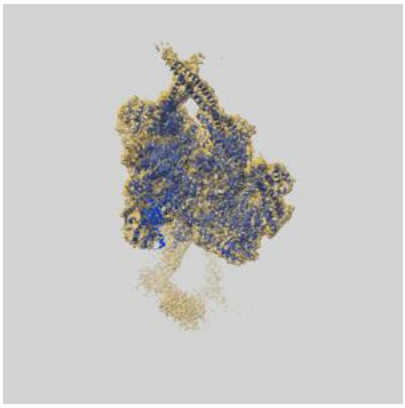
9.1 Map-model overlay



X



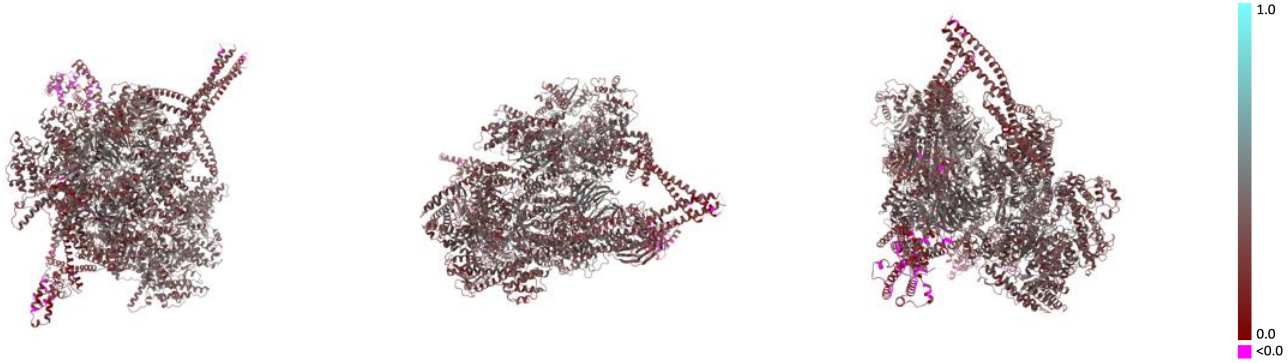
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.08 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

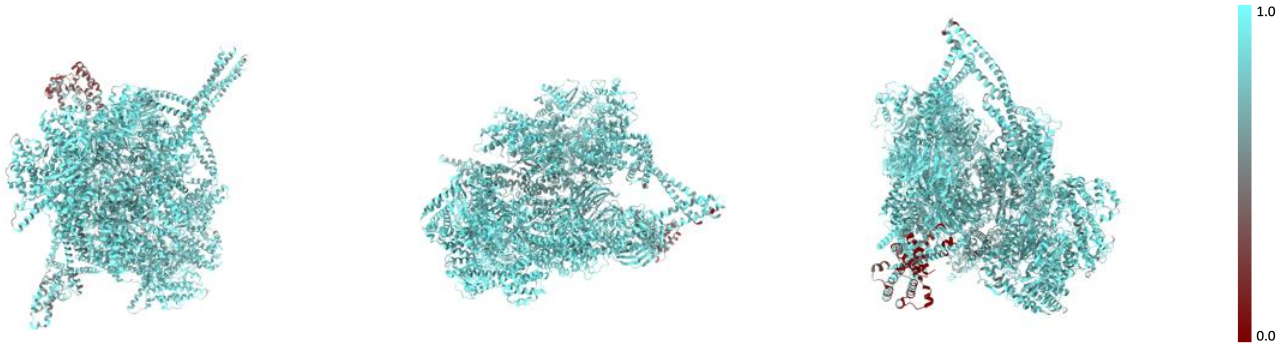
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

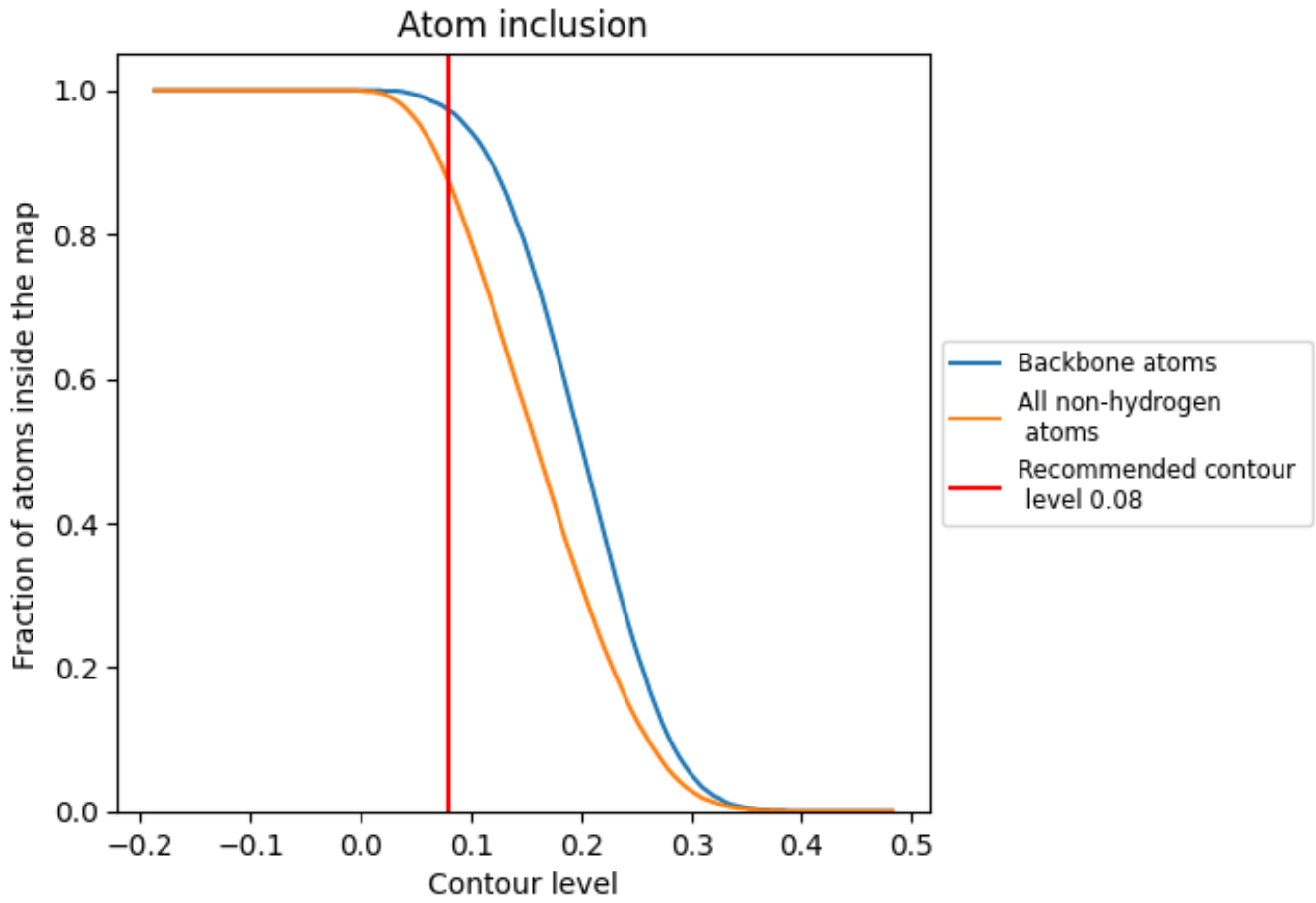
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.08).

9.4 Atom inclusion (i)



At the recommended contour level, 97% of all backbone atoms, 87% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.08) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8730	0.3360
A	0.8620	0.3330
B	0.8990	0.3430
C	0.8750	0.3970
D	0.9010	0.3220
E	0.3240	0.1010
F	0.5500	0.1330
G	0.8760	0.2920
H	0.8470	0.3090
I	0.7760	0.2370
J	0.8280	0.2870